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MULTIDIMENSIONAL SOCIAL EXCLUSION AND IMMIGRANTS' HEALTH IN EUROPE

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"Dynamics of Health and Welfare"

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Abstract

Background: Immigrants' lives are shaped by the Social Determinants of Health (SDOH) along with the migratory phases. The SDOH are the social, economic and environmental conditions in which people are born, grow, live, work and age that influence the health of individuals and populations. Immigrants are more vulnerable to social exclusion (SE) as they suffer from certain types of discrimination, higher levels of unemployment, precarious jobs, deepening levels of poverty, differential access to housing, and limited political and social participation; being all of these factors SDOH themselves. Even though migration is an emerging and increasing social, political and public health issue, very few studies applied the lens of SDOH to understand immigrants' experiences in Europe. Also, the empirical evidence on social exclusion is still scarce.

Aim: To examine the association between independent and overall dimensions of social exclusion and poor self-rated health (PSRH) and self-reported depressive symptoms (SRDS) in the immigrant population in Europe. Also, to analyze inequalities in SRDS between natives and immigrant groups according to their length of residence in Europe, and to test the mediating role of SE in explaining these differences.

Objectives: The thesis comprises four studies. In ***Study I (Chapter 3)***, the objective was to summarize existing literature on the relationship between SE and health outcomes in the immigrant population in Europe. In ***Study II (Chapter 5)***, the objective was to analyze inequalities in SRDS between natives and immigrant groups according to their length of residence in Europe and to test the mediating role of SE in explaining these differences. ***In Study III (Chapter 6)***, the objective was to examine the association between independent and overall dimensions of SE and SRDS in the immigrant population in Europe; stratifying the analysis by sex. Finally, in ***Study IV (Chapter 7)***, the objective was to analyze the association between multidimensional SE and PSRH in the immigrant population in Europe.

Methods:

In ***Study I*****,** a scoping review was conducted and quantitative articles that analyzed SE as a multidimensional concept but also in each of its dimensions, were included.

Study II was based on cross-sectional data from the 7th round of the European Social Survey 2014 (sample of 1792 Immigrants and 22557 native-born Europeans). The dependent variable was SRDS. Independent variables were: immigrant background and social exclusion factors that were classified into four groups (economic, social, cultural and political factors). Socially excluded individuals were

those less advantaged in each factor. All analyses were stratified by the length of residence. The independent and overall associations between SE and health outcomes were examined using Robust Poisson regression models (PR; OR; IC 95%).

Study III was based on cross-sectional, including 1816 economically active immigrants (European Social Survey, 2014). The dependent variable was SRDS. The independent variables were economic, social, cultural, and political SE factors. The association between SE factors and SRDS were tested by robust Poisson regression models (PR; OR; IC 95%).

Study IV used cross-sectional data, including 1268 economically active immigrants (European Quality of Life Survey 2016). The dependent variable was PSRH . The independent variables were economic, social, cultural, and political SE factors. The association between SE factors and PSRH were tested by robust Poisson regression models (PR; OR; IC 95%).

Results:

In ***Study I***, a total of nine studies, analyzed the multidimensionality SE and its association with health outcomes among the immigrant population in Europe. Besides, 26 studies analyzed factors related to the social, economic and cultural dimensions of SE and their associations with immigrants' health. Interactions were found between the economic, cultural and social factors in their associations with poor mental health and mental health. Other studies, analyzed structural indicators of SE based on country level integration policies. This review also found that SE factors such as material deprivation, precarious working conditions, discrimination, and low social support were associated with immigrants' poor mental and self-rated health.

In ***Study II***, immigrants had a higher prevalence of SRDS than natives; those residing in Europe for 1-10 years and ≥20 years had the highest prevalence. In the mediation regression analysis, immigrants residing in Europe for 1-10 years and ≥20 years were eligible for mediation because of their significant associations (PR:1.36; 95%CI: 1,20-1,53 for 1-10 years and PR: 1,44; 95%CI: 1,30-1,60 for >20 years). Multidimensional SE factors analyzed together completely explained these differences for immigrants residing in Europe for 1-10 years (PR: 1,09; CI: 0,96-1,23) and partially for immigrants residing for ≥20 years (PR: 1,23; CI: 1,11-1,36).

In ***Study III***, women had higher prevalences of SRDS than men (38.8% vs 26.4%). In women, those who found it difficult to live with household income (PR: 1.08; CI:1.01-1.13), who faced housing problems (PR: 1.09; CI:1.01-1.17), were unemployed (PR:1.20; CI:1.08-1.34), had low institutional trust (PR: 1.09; CI:1.02-1.17), who did not

have citizenship (PR: 1.12; CI: 1.04-1.20), and with ≥20 years of residence (PR: 1.12; CI:1.02-1.26) were more likely to report SRDS. In men, those who found it difficult to live with household income (PR: 1.21; CI: 1.12-1.30), faced housing problems (PR: 1.08; CI: 1.02-1.17), and were economically inactive (PR: 1.21; CI: 1.10-1.32) were more likely to report SRDS.

In ***Study IV,*** about 22% of the immigrant population reported poor SRH. Immigrants facing housing problems (PR: 1.46; CI95%:1.20-1.78), those unemployed (PR:1.48; CI95%1.32-1.95) and economically inactive (PR:1.98; CI95%: 1.56-2.51), with poor formal social contacts (PR:1.70; CI95%:1.16-2.52), who did not politically participate (PR:1.78; CI95%: 1.25-2.59), and those who did not felt a connection with society (PR: 1.40; CI95%: 1.13-1.73) had a higher probability of reporting PSRH.

Conclusions:

Policies should offer migrants the possibility to settle in good social and economic condition, promote efforts to eliminate social exclusion and prevent the associated health inequalities. Thus, immigrants might be able to achieve their development potential and contribute to the social and economic development of their countries of origin and destination. This is especially important in the context of the economic crisis in Europe, and its impact on health might be the cause for the loss of the healthy immigrant effect especially in countries that have been particularly affected by this crisis.

Besides, the results in this thesis reflect the need for gender-oriented social and integration policies. Immigrant women and men are particularly exposed to economic exclusion (insufficient income, unemployment). This integration and immigration policies should challenge the dominant perception of 'unskilled' migrants, seek to improve skills recognition, improve working conditions and help in regulating the informal economy of both the feminized low paid domestic care work and the informal work among men.

Resumo

Antecedentes: A vida dos imigrantes é moldada pelos Determinantes Sociais da Saúde (DSS), juntamente com as fases migratórias. Os DSS são as condições sociais, econômicas e ambientais em que as pessoas nascem, crescem, vivem, trabalham e envelhecem e influenciam a saúde de indivíduos e populações. Os imigrantes são mais vulneráveis à exclusão social (ES), pois sofrem com certos tipos de discriminação, níveis mais altos de desemprego, empregos precários, níveis mais altos de pobreza, acesso diferenciado à moradia e participação política e social limitada; sendo todos esses DSS eles mesmos. Embora a migração seja uma questão social, política e de saúde pública emergente e crescente, poucos estudos aplicaram a abordagem do DSS para entender as experiências dos imigrantes na Europa. Além disso, as evidências empíricas sobre exclusão social ainda são escassas.

Objetivo geral: Examinar a associação entre as dimensões independentes e globais da exclusão social e a pobre autoavaliação da saúde (PAS) e os sintomas depressivos autorreferidos (SDA) na população imigrante na Europa. Além disso, analisar as desigualdades no SDA entre grupos de nativos e imigrantes de acordo com o tempo de residência na Europa e testar o papel mediador do ES na explicação dessas diferenças.

Objetivos específicos: A tese compreende quatro estudos. No Estudo I (Capítulo 3), o objetivo era resumir a literatura existente sobre a relação entre SE e resultados de saúde na população imigrante na Europa. No Estudo II (Capítulo 5), o objetivo era analisar as desigualdades no SDA entre grupos de nativos e imigrantes de acordo com o tempo de residência na Europa e testar o papel mediador do SE na explicação dessas diferenças. No Estudo III (Capítulo 6), o objetivo era examinar a associação entre as dimensões independentes e globais de ES e SDA na população imigrante na Europa; estratificando a análise por sexo. Finalmente, no Estudo IV (Capítulo 7), o objetivo foi analisar a associação entre ES multidimensional e PAS na população imigrante na Europa.

Métodos:

No ***Estudo I***, foi realizada uma revisão exploratória e artigos quantitativos que analisaram a ES como um conceito multidimensional, mas também em cada uma de suas dimensões foram incluídos.

O ***Estudo II*** foi baseado em dados transversais da 7ª rodada da Pesquisa Social Europeia de 2014 (amostra de 1792 imigrantes e 22557 europeus nativos). A variável dependente foi SDA. As variáveis independentes foram: origem imigrante e fatores de exclusão social que foram classificados em quatro grupos (fatores econômicos, sociais, culturais e políticos). Indivíduos socialmente excluídos foram os menos favorecidos em cada fator. Todas as análises foram estratificadas pelo tempo de residência. As associações independentes e gerais entre ES e resultados de saúde foram examinadas usando modelos de regressão de Robust Poisson (PR; OR; IC 95%).

O ***estudo III*** foi baseado em dados transversais, incluindo 1816 imigrantes economicamente ativos (European Social Survey, 2014). A variável dependente foi SDA. As variáveis independentes foram fatores econômicos, sociais, culturais e políticos de ES. A associação entre fatores de ES e SDA foi testada por modelos robustos de regressão de Poisson (PR; OR; IC 95%).

O estudo IV utilizou dados transversais, incluindo 1268 imigrantes economicamente ativos (European Quality of Life Survey 2016). A variável dependente foi PAS. As variáveis independentes foram fatores econômicos, sociais, culturais e políticos de ES.. A associação entre fatores de ES e PAS foi testada por modelos robustos de regressão de Poisson (PR; OR; IC 95%).

Resultados:

No ***Estudo I***, um total de nove estudos analisou a multidimensionalidade SE e sua associação com os resultados de saúde entre a população imigrante na Europa. Além disso, 26 estudos analisaram fatores relacionados às dimensões sociais, econômicas e culturais da SE e suas associações com a saúde dos imigrantes. Foram encontradas interações entre os fatores econômicos, culturais e sociais em suas associações com problemas de saúde mental e saúde mental. Outros estudos analisaram indicadores estruturais da SE baseados em políticas de integração em nível de país. Esta revisão também constatou que fatores de SE, como privação material, condições precárias de trabalho, discriminação e baixo apoio social, estavam associados a problemas de saúde mental e autoavaliação dos imigrantes.

No ***Estudo II***, os imigrantes apresentaram maior prevalência de SDA do que os nativos; aqueles que residem na Europa entre 1 e 10 anos e $\geqslant$ 20 anos tiveram a maior prevalência. . Na análise de regressão da mediação, os imigrantes residentes na Europa por 1 a 10 anos e $\geqslant$ 20 anos foram elegíveis para mediação por causa de suas associações significativas (RP: 1,36; IC 95%: 1,20-1,53 por 1 a 10 anos e RP: 1,44; IC95%: 1,30-1,60 por> 20 anos). Os fatores multidimensionais de ES analisados

em conjunto explicaram completamente essas diferenças para imigrantes residentes na Europa por 1 a 10 anos (PR: 1,09; IC: 0,96-1,23) e parcialmente para imigrantes residentes por ⩾ 20 anos (PR: 1, 23; IC: 1,11-1,36).

No ***Estudo III***, as mulheres apresentaram maiores prevalências de SDA do que os homens (38,8% vs 26,4%). Nas mulheres, aqueles que acharam difícil viver com renda familiar (RP: 1,08; IC: 1,01-1,13), que enfrentavam problemas de moradia (RP: 1,09; IC: 1,01-1,17), estavam desempregados (RP: 1,20; IC: 1,08-1,34), possuían baixa confiança institucional (RP: 1,09; IC: 1,02-1,17), que não possuían cidadania (RP: 1,12; IC: 1,04-1,20) e com ⩾ 20 anos de residência (RP: 1,12; CI: 1,02-1,26) apresentaram maior probabilidade de SDA. Nos homens, aqueles que acharam difícil viver com renda familiar (RP: 1,21; IC: 1,12-1,30), enfrentaram problemas de moradia (RP: 1,08; IC: 1,02-1,17) e eram economicamente inativos (RP: 1,21; IC : 1.10-1.32) eram mais propensos a relatar SDA.

No ***Estudo IV***, cerca de 22% da população imigrante relataram uma PAS. Imigrantes que enfrentam problemas habitacionais (RP: 1,46; IC95%: 1,20-1,78), desempregados (RP: 1,48; IC95% 1,32-1,95) e economicamente inativos (RP: 1,98; IC95%: 1,56-2,51), com problemas sociais formais contatos (RP: 1,70; IC95%: 1,16-2,52), que não participaram politicamente (RP: 1,78; IC95%: 1,25-2,59) e aqueles que não sentiram conexão com a sociedade (RP: 1,40; IC95%: 1,13-1,73) apresentaram maior probabilidade de relatar PAS.

Conclusões:

As políticas devem oferecer aos migrantes a possibilidade de se estabelecerem em boas condições sociais e econômicas, promover esforços para eliminar a exclusão social e impedir as desigualdades de saúde associadas. Assim, os imigrantes podem ser capazes de atingir seu potencial de desenvolvimento e contribuir para o desenvolvimento social e econômico de seus países de origem e destino. Isso é especialmente importante no contexto da crise econômica na Europa, e seu impacto na saúde pode ser a causa da perda do efeito saudável dos imigrantes, especialmente nos países que foram particularmente afetados por essa crise.

Além disso, os resultados desta tese refletem a necessidade de políticas sociais e de integração orientadas para o gênero. Mulheres e homens imigrantes estão particularmente expostos à exclusão econômica (renda insuficiente, desemprego). Essas políticas de integração e imigração devem desafiar a percepção dominante de migrantes 'não qualificados', buscar melhorar o reconhecimento de habilidades, melhorar as condições de trabalho e ajudar a regular a economia informal do trabalho doméstico de baixa remuneração entre mulheres e o trabalho informal entre homens.

List of Publications

Arias-Uriona, AM. Inequalities in depressive symptoms between natives and immigrants in Europe: The mediating role of social exclusion, forthcoming in Public Health Reports/Cadernos de Saude Pública.

Arias-Uriona, AM. Multidimensional Social Exclusion and Self-reported Depressive Symptoms in the Immigrant Population in Europe (Submitted).

Arias-Uriona, AM. Multidimensional Social Exclusion and Self-reported Health in the Immigrant Population in Europe (Submitted).

Arias-Uriona, AM. The association between social exclusion and health among the immigrant population in Europe: A scoping review (Submitted).

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Acronyms and Abbreviations

AROPE	At risk of Poverty or Social Exclusion
CSDOH	Commission on Social Determinants of Health
CRSIH	Commission on the Reduction of Social Inequalities in Health
EU	European Union
IDPs	International Displaced Persons
MDGs	Millennium Development Goals
SDOH	Social Determinants of Health
SE	Social Exclusion
SE/I	Social Exclusion and Inclusion
SEKN	Social Exclusion Knowledge Network
SRH	Self-rated health
WHO	World Health Organization
UN	United Nations
US	United States

Chapter 1: Introduction

1.1. The magnitude of migration

1.1.1. Global trends of migration

Even though migration is not new in the history of humanity, it has been during the twenty-first century when the diversity and volume of migration growth due to the globalization phenomenon (1). Besides, migration is placed in the center of the policy and academic debates as it has political, social, economic, historical, anthropological, geographical, demographic and global developmental implications (2). As reported by the United Nations (UN), in 2015 there were over 244 million international migrants in the world (3), which is 41% more compared to 154 million in 1990 (4). The most significant numbers (90,2 million) of international migrants move from one developing to another developing country, the so-named "South-to-South migration" that represented 37% of the total international migrant stock (5). Also, a significant number of 85.3 million people migrate from one developing to a developed country, which is the "South-to-North migration" (5). According to the latest available data on labor and migration, in 2017 there were 164 million workers worldwide, and 24% of them are found in Western Europe (6).

While migration is driven by many complex economic, political and social factors: either in the migrant's country of origin (push factors) or the country of destination (pull factors), the most significant causes of internal and international migration in the world today are economic inequality and family reunification (7). Hence, lack of job opportunities in developing countries and low salaries constitute "push" factors, drawing migrants – and their families- towards countries with higher standards of living, economic growth, and employment opportunities (7, 8). However, other people are forced to migrate due to environmental factors such as earthquakes, industrial accidents, and floods. (7, 8). By the end of 2015, there were also about 65 million displaced people, mainly due to persecution, conflicts, generalized violence, war or human rights violations in their home countries. Out of them, 21.3 million were refugees, 8.2 million were international displaced people, and 1.8 million were asylum-seekers (5, 9).

1.1.2. The magnitude of migration in Europe

For most European countries, immigration at large scale is a more recent phenomenon compared to the US, Canada or Australia (10). For instance, in 2011 Germany and Spain had foreign-born populations similar to the US in relative terms they represented 14.5% and 13% of their total populations, respectively. In

contrast, foreign-born populations in West Germany before 1960 and in Spain before the early 1990s were below 1% (11). In recent decades the demographic profile of many European countries has changed (12). Immigrant populations in Europe are very heterogeneous differing regarding ethnicity, origin, and educational attainment (11). Nowadays, immigration constitutes one of the most critical issues facing the EU being migrant integration a significant challenge (13).

In 2017, there were 36.9 million people born outside of the EU-28 living in an EU Member State. In absolute terms, the largest numbers of non-EU nationals living in the EU were found in Germany (9.2 million persons), the United Kingdom (6.1 million), Italy (5.0 million), France (4.6 million), and Spain (4,4 million). Non-EU nationals in these countries collectively represent 76 % of the total number of non-EU nationals living in the EU-28, while the same five Member States share a 63 % of the EU-28's population (14). Besides, Europe is facing a migratory crisis since the beginning of 2015, when the number of refugees and migrants increased mainly from Syria, Afghanistan, and Irak. They make the journey to the EU to seek asylum, traveling across the Mediterranean Sea or through Southeast Europe(15). By January 2019, about two million people have arrived on European shores by the Mediterranean sea, and about 18 thousand people have died (16).

1.1.3. Social Inclusion of forein-born immigrants residing in Europe

Data from 2016 shows that Non-EU immigrants were slightly more women than men (53.3%), most of the immigrant population (73.3%) are at the core working age from 25 to 54 years; and the main reasons for migration are: family reasons (49.5%), work (29.2%), educational purposes (6.6 %), international protection and asylum (5.1), many of them migrated without having a job (20.4 %), while a few had already found one (8.8 %); almost five in seven foreign-born immigrants resides in the country for 10 years or more (69.4 %) (17).

Migrants play an essential role in the labor markets and economies of the countries they settle in (18). Employment and working conditions are particularly relevant to migration and health issues, as economic motivation is the second "push" factor in migrating (17, 19). Jobs are the primary source of income for immigrants and access to employment is a crucial indicator of migrant integration. It also helps to take their place in society as a whole by, for instance, leading to decent accommodation and the host country's health system(20). However, it is often difficult for immigrants to enter the labor market in host countries(21). Thus, in 2017, the unemployment rate for Non-EU born migrants was 6.4 percentage points higher than the rate for the native-born

population (22). Also, this group experienced the most significant increase in unemployment from 2008 (23).

While access to employment is a key indicator of integration, the kind of job gives a more comprehensive picture of the nature of an immigrant's place in the labor market. The incidence of self-employment and proportions of immigrants working in the public services sector are also relevant indicators (20, 24). In 2017, almost one in five migrants born outside the EU was a temporary employee, compared to one in eight for native-born employees (22). Immigrants are often hired in precarious jobs in the sectors of agriculture, food processing, construction, semi-skilled or unskilled manufacturing jobs, and in low-wage service jobs (25). In 2014, non-EU immigrants occupied the less qualified jobs (elementary occupations and service workers were the two most common occupational categories (24). Working conditions also are often tougher physical, demanding, dangerous, monotonous, with more extended working hours, lower wages, with lower unionization rates, and more frequently lack health and safety protection (26-28). Immigrants often work at the margins of the formal economy with irregular employment (25). Also, female immigrants are especially vulnerable, those employed in high-income host countries often face a double disadvantage in labor market such as problems related to their integration in the host country, and the consequent gender inequalities in the labor market (29). Besides, women usually are considered as partner migrants, as they follow their partner who migrates and therefore, might depend economically on them (30).

In 2017, about 50 % of the non-EU citizens in the EU were at risk of poverty or social exclusion (AROPE) compared with 22% of the nationals (31). The economic indicator AROPE is the headline indicator monitoring the EU 2020 poverty target and includes three dimensions: income poverty, at risk of poverty, severely materially deprivation or living in households with very low work intensity. People are at risk of poverty or social exclusion when they present any of these conditions (32). The rate of being AROPE is higher in female non-EU citizens (41.6 %) than their male counterparts (39.1%) (31); Besides, the at-risk-of-poverty rate, which is people with an equivalised disposable income (EDI) below a threshold set at 60 % of the national median EDI, was 15.3% in nationals and 41.2% in non-EU citizens. The in-work at-risk-of-poverty rate (working population facing poverty) was 8,5% percentage in nationals and higher in migrant population, at 21.6%. Besides, the severe material deprivation rate is defined as the proportion of persons who cannot pay for some items considered necessary to a decent and adequate life (e.g., to pay their rent, mortgage or

utility bills). Non-EU citizens tended to face higher rates(16.7%) of severe material deprivation in the EU than the nationals (6.6%) (31).

Housing and living conditions of migrants are also crucial aspects of immigrant inclusion. In 2016, 70% of EU- nationals lived in their dwelling compared to the 26.8% of all non-EU citizens that owned their dwellings (33). The immigrant housing overcrowding rate in the EU is 17% against 11% among nationals (34). In many European countries, immigrants face spatial segregation; they live on the outskirts of the cities and in run-down neighborhoods where rent is lower, which is linked to low incomes (20, 35).

Obtaining nationality would be the ultimate goal of the integration, although there is an ongoing debate among specialist as citizenship itself is not a proof of integration. Moreover, the legislation that governs nationality could be more or less restrictive depending on the countries. However, having host-country nationality is perceived to be a sign of integration as in most of the European countries applicants are required to know host country language, values, and culture (36). In 2016, about 59% of long-settled immigrants in the EU had host-country citizenship. One first citizen's right is the right to vote. Participating in elections is also perceived as a sign of integration; it is a desire to influence the life of society by selecting those who will govern it (36). An average of 74% of immigrants with host-country nationality in the EU report that they participated in the most recent national elections – less than the native-born rate of around 80% (34).

1.1.4. The current financial crisis in Europe, social exclusion of the non-EU immigrant population and health

Since the beginning of the economic crisis in 2008, Western countries have been suffering from huge impacts not only in the economic but also in the social, cultural and political spheres (37). It is important to describe the context in which this study is developed because of the impact that the current financial crisis has been having on the social determinants of health (SDOH) (38-40). The SDOH refers to the social, economic and environmental conditions in which people are born, grow, live, work and age which influence the health of individuals and populations (41, 42). The greatest impact has been seen among disadvantaged and vulnerable populations such as youth, immigrants and ethnic minorities (38-40). These groups are more likely to suffer exclusionary processes which might broader pre-existing health inequalities, leading to worse health (39, 40).

The first effect of the financial crisis was the increase in the unemployment rates which is still high in southern European Countries (43). Besides, the Policy responses to the crisis had also an impact on employment and poverty especially in southern European countries, such as Spain, Greece, and Portugal where austerity policies and large-scale cuts have been introduced (44). Below there is a summarize of the impacts of the financial crisis on the SDOH, especially those related to social exclusion **among general and immigrant populations in Europe**. The effects on health in both populations are also briefly discussed.

In March 2010, the EU set the target of reducing the number of people living below the poverty line or in social exclusion by 20 million for the year 2020. Unfortunately, due to the crisis, this goal will not be reached. At the onset of the global financial and economic crisis, the differences between unemployment rates for the native-born and foreign-born populations were relatively small, but these gaps widened in consecutive years following the crisis, reaching a peak of 10 pp in 2013. The unemployment rates among young non-EU immigrants were even higher reaching a gap of 18 pp in 2013 (45).

The EU-28 activity rate peaked in 2008 at 70.3 % and decreased during successive years to stand at 68.4 % in 2012 and 2013 (46). For non-EU immigrants, it also decreased from 72% in 2008 to 69.8 in 2015. However, the changes in employment characteristics were not the same in European countries (46). For instance, fixed-term contracts have declined in Spain, which previously had a high rate of these contracts. In other countries, such as Ireland and some central and eastern Member States changes in labor legislation have encouraged the use of temporary contracts. Involuntary temporary and part-time work has also risen, especially in countries most affected by the crisis such as Ireland and Spain (47). Non-EU immigrants were more affected by worsening working conditions due to their high concentration in the construction, retail and hospitality sectors(48).

Housing conditions of foreign-born immigrants aged 25-54 were already less favorable than those for native-born before the onset of the crisis. In 2008, 26% of non-EU immigrants lived in overcrowding housing, compared to 19% among native-born(49). In 2015, the overcrowding rate for non-EU-born aged 20–64 was significantly higher (24.5%) compared with 16.5 % of the native-born population (33).

Besides, during the current crisis, changes to restrict health coverage to immigrants were reported in the Czech Republic and Spain affecting immigrants without permanent resident status, and undocumented adult immigrants (50). The limited

available data in Europe on the effects of the financial crisis on health suggest that these effects are concentrated among people experiencing job loss and among some of the most vulnerable and least visible groups in society such as immigrant populations (50). In the general population, health changes are increasingly documented (51, 52). For instance, there is an increasing in fair and poor self-rated health (53-55), poor mental health, and medicalization (56, 57). Unemployment has been associated with poor mental health (37, 56, 58, 59). There is also some evidence that the health of immigrants, especially those undocumented and lacked social security, deteriorated much more during the crisis than that of natives (60, 61). An association between employment conditions and poor mental health in immigrant population was also found (62, 63). Evidence also reveals health inequalities due to different socioeconomic characteristics such as education level, employment status (64-66)Also, new onset of health inequalities in poor mental health in male immigrants and an equalization of the previously lower use of psychotropic drugs by them were found (67). An increase in self-rated health inequalities in female immigrants was found (67).

In sum, migration represents a significant and worldwide phenomenon. In Europe, the immigrant population grew exponentially in the last decades. The actual economic crisis has had an impact on the social determinants of health (e.g., causing higher unemployment rates, loose of income, worsening working conditions) and through them, it has been impacting on health. Immigrants are one of the most affected and vulnerable populations, as economic crisis could have worsened the preexisting inequalities in health that these groups face. They are at risk of suffering from social exclusion mainly due to the deterioration of the labor market. There is still limited evidence on the impact on health in the financial crisis context. However, some studies have found poor self-rated health and the affectation of mental health being more heterogeneous depending on socio-economic characteristics: gender, education, age, and country of birth. Those who become unemployed or being affected by the rise in poor working conditions have a higher risk of poor health.

1.2. Two useful lens for migrants' health: The Social Determinants of Health and Social Exclusion approaches

1.2.1. Migration through the Social Determinants of Health lens

One of the most significant developments in health and health policy is the emergence of the global 'health equity' approach concerned with the social determinants of health (SDOH), which in recent decades have gained the attention of

researchers and policy-makers all over the world (68). ***Social inequalities*** in health are unfair and avoidable variations in health experience among different population groups (e.g., according to SES, disability, age, gender or ethnicity) that result in poorer health among the most disadvantaged groups (69-71). Therefore, social inequalities in health arise because of inequalities in the conditions of daily life and the drivers that give rise to them: differences in power, money, and resources (42). ***Health equity*** implies addressing health inequalities (71, 72), equity means justice, and it is linked to social and human rights (73). Health equity is the goal that motivates efforts to eliminate disparities in health especially among groups who are socially or economically in disadvantage and defined by racial/ethnic, sexual orientation, or gender identity (74)**.** For reducing inequalities in health, there is the need to take action on the SDOH (41, 42).

Scholarship on immigrant health has increased in the last decades, although the SDOH approach has been less used (75). Immigration and the SDOH are two related areas of public health. However, as some researchers argue there is still not sufficient dialogue with each other, losing opportunities for research, practice, and policy work (68, 75, 76). The SDOH are increasingly recognized as central to health, because morbidity and mortality patterns follow inequalities rooted in conditions produced and reproduced by political economies, such as social structures, policies, and institutions. There is a growing interest for researchers in analyzing which social and institutional contexts shape individuals' lives and how factors such as employment, housing, living conditions, access to health, social services, and discrimination are consequential for health and well-being (75). Thus, SDOH, have particular implications for migrants, as migration can exacerbate the impact of these factors and vice-versa (75).

Migration must be treated as a health determinant itself (75, 77), but the term Social Determinants of Migrant health (SDOMH) is used to underscore structural factors that shape the health and well-being of migrants (75). As Castañeda et al. noticed, being an immigrant limits behavioral choices (e.g., dietary habits, smoking, alcohol consumption, health service utilization, screening practices) and often impacts and alters the effects of other axes of inequality, such as race/ethnicity, gender, or socioeconomic status (75). For instance, some factors that impact on immigrants' behavioral choices and health outcomes are the conditions in which they live, develop, and work, family interaction, interpersonal communication, trust, sense of belonging (78), cultural beliefs, prevalence health conditions, access to healthcare (79). Application of these factors might assist immigrants to cope with challenges that most human beings

experience throughout the life course, permitting them to maintain a sense of well-being regardless of the level of stress they perceived (78).

Considering immigration as a SDOH also requires tackling a wider sphere of structural factors affecting health -for instance, integration, citizenship, and work policies- as well as other determinants of inequity. Along with this line, are the conclusions of the "Social Determinants of Migrant Health Conference ", that took place in October, 2014, they were that: a) there is a need for an integration into immigrant health research and policy of socioeconomic and structural factors; b) that further studies are needed on SDOMH both in sending and receiving countries and on their connections with migrant integration and adaptation, nativity, impact on subsequent generations, duration of residence, age at migration, language, and sense of group identity across diverse migrants, within and across countries; and c) the importance of the integration of a life-course approach, focused on critical developmental periods, accumulation of risk and social trajectories. Besides, as SDOH in sending countries affect migrant health long before migration, after migration, and across the life-course, moreover, they influence the health not only of migrants themselves but also of subsequent generations (80).

1.2.2. Social exclusion and the Social Determinants of Health approach: an emerging topic

The concept of social exclusion is increasingly used in the analysis of complex mechanisms and processes that enable individuals and households to be part of their society, going beyond the reductionist economic view that associates social exclusion to lack or insufficient income, thus, opening the perspective to other dimensions (81, 82). The Social Exclusion Knowledge Network (SEKN) is one of nine networks established to support the work of the WHO Commission on Social Determinants of Health. These knowledge networks reviewed theories and evidence linking social determinants (e.g., social exclusion, gender, employment conditions, urban settings) to levels of population health and health inequalities (83, 84). The SEKN defined social exclusion as ‘‘dynamic multidimensional processes driven by unequal power relationships interacting across four main dimensions - economic, political, social and cultural - and at different levels including individual, household, group, community, country and global’’. The experience of being restricted to participate in these dimensions can be expected to increase exposure and vulnerability to adverse health outcomes (85).

Therefore, from the SDOH approach, social exclusion is considered a significant factor in the causation and maintenance of health inequalities (86-89). Not only, the social exclusion related factors such as material deprivation, poor housing, few social contacts, and discrimination have negative impacts on health, but also the experience of being excluded might lead to poor health through psychosocial stress mechanisms (82, 87, 90). Besides, the causal direction from social inequities to social exclusion and health inequities is multidirectional and mutually reinforcing in feedback loops (91), as poor physical and mental health, in turn, can be a barrier to social and economic participation (82). Besides, the cumulative nature of social exclusion is linked to the life-course model proposed by the SDOH approach, as each linkage between the social exclusion dimensions deepens a person's negative experience and the depth of social exclusion is reinforced through the life cycle (92). Very often exclusion processes in one dimension affect those in other dimensions (87, 93). For instance, unemployment might lead to loss of social contacts, income, inadequate housing, and insecure living environment or reduced access to health care. All of these factors affect health negatively directly or indirectly. Therefore, health risks tend to accumulate in socially excluded individuals and groups (86).

Even though migration is an emerging and increasingly social, political and public health issue (2, 20, 75, 94), very few studies applied the lens of social determinants of health to understand immigrants' experiences in Europe. Also, the empirical evidence on social exclusion is still scarce. Only two studies (82, 86) analyzed social exclusion using a multidimensional concept from the Social Determinants of Health (SDOH) approach, and validating an index for public health surveys in the Netherlands. Other two studies included a structural indicator the Migrant Integration Policy Index (MIPEX), which measures policies to integrate migrants in the European Union (EU), the US and other countries. They found a relationship between living in "exclusionist" countries and poor health outcomes in immigrants (95) and a relationship between living in "assimilationist" countries(96), reporting perceived group discrimination and poor health in immigrants.

Also, few studies so far analyzed at the same time factors related to the economic, social and cultural dimensions of social exclusion and health outcomes (28, 67, 97-100). Most of the studies analyzing SDOH related to social exclusion factors have focused on the economic and social dimensions (88, 101-107), usually analyzing indicators of one dimension as independent variables and the others as the control variables.

In sum, it is essential to be aware that social exclusion and its association with health inequalities have various reasons and cannot be explained by a single factor. Health inequalities in immigrant populations can be defined by several factors such as differences in the social, cultural, economic and political context and risk factors in both in the country of birth and host countries, as well as by the axes of inequality: gender, age, and social class (108). Overall, evidence suggests that a comprehensive understanding of migrants' health must be based on a conceptual framework that explores the dynamic interaction of a variety of social determinants within a context that encompasses the migration process from origins to destinations and back again(109). Thus, the multidimensionality of social exclusion might be a useful approach to analyzing them. The significant role played in health inequality by different factors of social exclusion, points to the need to focus on the most vulnerable groups (88).

1.3. The rationale for the study to focus on immigrant population: Why immigrants' social exclusion and health matters?

The increase of immigration flows and the health of migrants are important public health challenges faced by governments and societies (110-112). Since the world formulated and adopted new Sustainable Development Goals (SDGs), every SDG should consider pro-health strategies, following encapsulating equity in achieving new health targets by 2030 (113, 114). One of these SDGs aims to reduce inequalities of outcome within and among countries by reducing, eliminating discriminatory laws, policies, and practices and promoting the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status (115). Also, regardless of all these factors, it is the right to health which is at the core of the human rights principles (116), reducing and eliminating health inequalities associated with social determinants in Europe is also a target of Healthy People 2020 (117). Health equity is social justice as health has a particular value for individuals being essential for an individual's well-being and for the ability to participate fully in the workforce and democratic society (118).

It is essential to include migration-related health challenges in the migration and development debate, mainly because of the multiple health vulnerabilities experienced by migrants, which affect their human development prospects (119), as they like everyone else, have the right to the highest attainable standards of physical and mental health (110). As mentioned before one of the main reasons to migrate is to improve immigrants' lives by searching for better working conditions. Therefore, health is the primary asset of immigrants, and the prerequisite for them to be able to achieve their development potential and contribute to the social and economic development of their

countries of origin and destination (120). Therefore, efforts to eliminate racial/ethnic inequalities in health are crucial (118).

Besides, immigrants are an opportunity not only to the economic and social development but also to the cultural development of European societies, thus, to provide immigrants with the necessary skills to achieve successful integration is an essential preoccupation of policy-makers in the EU (43, 112, 121). However, while plans to improve immigrant integration, and to improve the health of immigrants do exist in Europe(112, 122-124), immigrants still face many problems in achieving their human rights; fulfilling basic needs, and social integration (5, 20, 125-127). The immigrants' lives are shaped by social determinants of health in their homelands, and they face new social, economic, cultural, and political conditions in destination countries (42, 75, 128, 129). They are more vulnerable to social exclusion as they suffer from certain types of discrimination, higher than average levels of unemployment and precarious jobs, deepening levels of poverty, differential access to housing, neighborhood segregation, limitations in the access to public services, in political and social participation (20). Therefore, as the literature review conducted for this thesis showed, there is a need to analyze the association between multidimensional social exclusion factors and poor health-related outcomes as the empirical evidence is still scarce.

1.4. Purpose of the study and Research Questions

The purpose is to examine independent and overall associations of social exclusion with poor health outcomes. Also to examine its contribution to health inequalities in depressive symptoms.

Question 1: Are there inequalities in depressive symptoms between natives and immigrant groups according to their length of residence in Europe, and is there a mediating role of social exclusion in explaining these differences?.

Question 2: Are there associations between independent and overall dimensions of social exclusion and self-reported depressive symptoms among female and male immigrants in Europe?.

Question 3: Are there associations between independent and overall dimensions of social exclusion and self-reported health in the immigrant population in Europe?.

An overview of the research questions and data used in this thesis are shown in fig.1.

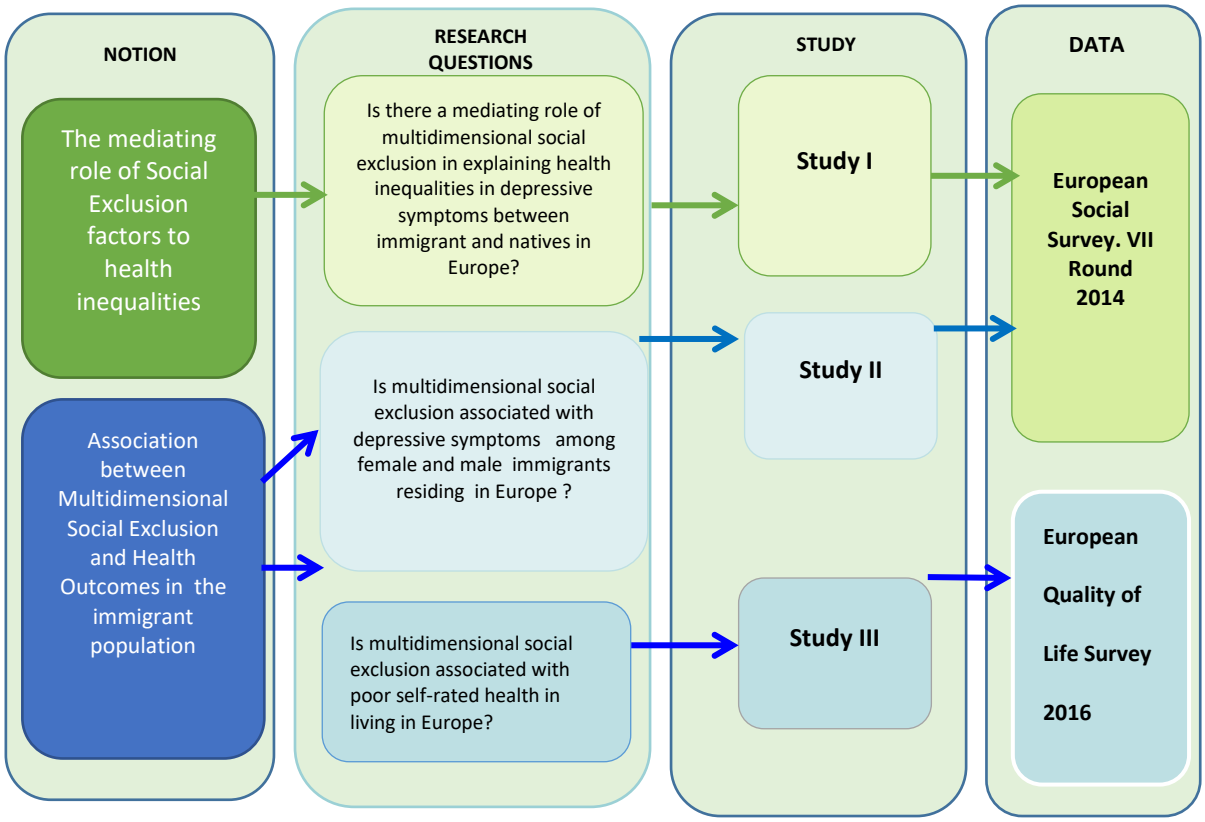

Figure 1. Thesis Research Framework

1.5 Contribution of the study to the literature

This study contributes to the literature as follows:

- It is among the first studies measuring social exclusion as a multidimensional concept and from the Social Determinants of Health approach, analyzing various social exclusion factors at the same time.
- It is among the first studies in analyzing the association between multidimensional social exclusion and health outcomes in immigrants living in Europe. Also in analyzing the mediating role of social exclusion in explaining health inequalities between immigrants and natives in Europe.

1.6 Theoretical model of the study

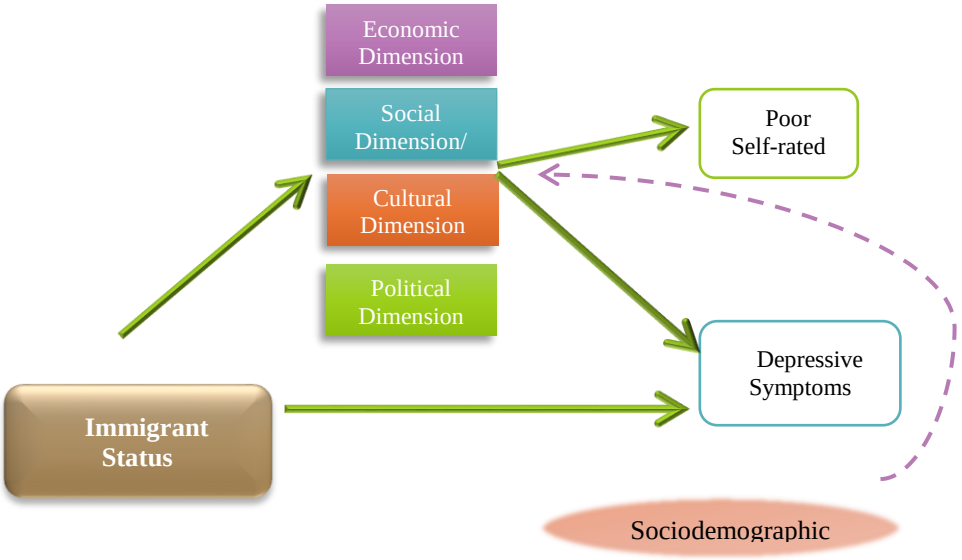

Figure 2. Theoretical model of the thesis

1.7 The organization of the thesis

This thesis is divided into six chapters. Chapter 1 introduces the magnitude of the immigration phenomenon in Europe, the research context of this study, and the purpose of the thesis. Chapter 2 presents the theoretical frameworks that were adopted in the study, namely, the Social Exclusion Framework proposed by the Social Exclusion Knowledge Network (SEKN) of the Commission on Social Determinants of Health of the World Health Organization, and its linkages with the Social Determinants of Health, and the Social Capital conceptual frameworks. Chapter 3 presents a review of the existing literature on social exclusion as a multidimensional concept and its relationship with health outcomes among general and immigrant populations in Europe. Chapters 4 presents an introduction to the studies comprised in this thesis and Chapters 5 to 7 present the methods, results, discussion, limitations of the studies carried out for this thesis.

Chapter 2: Conceptual Framework

The objective of this conceptual framework is to describe the theoretical models used in this thesis. These models and the main concepts will be briefly described. First, there is an overview of the Social Determinants of Health (SDOH) (41), and the Social Exclusion (SE) (85) theoretical frameworks, both developed by the Commission on Social Determinants of Health of the World Health Organization. Second, the SDOH approach for immigrants' health. Finally the social capital and health at the individual level model developed by Michael Rostila (89).

2.1. Definitions and terms

2.1.1. The concept of immigrant

Because of the absence of an internationally accepted definition of what constitutes a "migrant", countries and agencies within countries may use different definitions based on their policies, regulations, data sets, and practices. In the literature, 'immigrant' and 'migrant' are commonly used interchangeably among researchers, although dictionary definitions distinguish 'immigrants' - people who are or intend to be settled in their new country- from 'migrants' who are temporarily resident (130). This study uses the International Migration Organization (IMO) definition for migrant that is "any person who has moved across an international border away from his/her habitual place of residence, regardless of the person's legal status; whether the movement is voluntary or involuntary; what the causes for the movement are; or what the length of the stay is" (130). However, immigrants with at least one year of residence were included in this thesis.

2.1.2. The concepts of health and migrants' health

Health as a concept can be examined in many different ways, ranging from people's own feeling about their state of health to physicians' diagnoses based on medical science. The World Health Organization suggests that "health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity (131). This very broad definition of health is, however, difficult to study empirically. Therefore, this thesis focuses on states that deviate from good health in the form of the disease (89). At the same time, the study includes aspects of migrant's health influenced and affected in their country of origin, and in host countries where they reside (77).

2.2. The Social Determinants of Health Framework

There are different conceptual frameworks for the Social Determinants of Health (71, 90, 132). This dissertation uses the model proposed by the Commission on Social Determinants of Health (CSDOH) and the World Health Organization (WHO) (41). The CSDOH defines the Social Determinants of Health as the social, economic and environmental conditions in which people are born, grow, live, work and age that influence the health of individuals and populations (42, 87).

The elements of the CSDOH model (42) (fig.3) are **a) the structural determinants** which constitute the interplay between the socio-economic-political context, the structural mechanisms which generate social stratification and the resulting socioeconomic position of individuals. These structural determinants are the "social determinants of health inequities". **The socio-economic and political context** refers to a set of determinants that cannot be quantified at the individual level, but configure and maintain social hierarchies and affect people's health opportunities. They include the governance, the macroeconomic policies (e.g., fiscal, monetary, trade policies and underlying labor market structures), social and public policies affecting labor, welfare, education, and cultural and societal values. The most important **structural mechanisms** include social class, gender, income, education, occupation, and race/ethnicity. The structural determinants operate through the **b) intermediary social factors or social determinants of health.** These determinants include ***material circumstances*** which are determinants linked to the physical environment, such as living conditions, consumption potential (e.g., the financial means to buy healthy food, warm clothing, and working and neighborhood environments). The ***psychosocial circumstances*** include psychosocial stressors (e.g., negative life events and job strain), stressful living circumstances (e.g., high debt, lack of social support, coping styles). The ***behavioral and/or biological factors*** include lifestyle factors such as nutrition, physical activity, tobacco consumption, and alcohol consumption, and genetic factors. Finally, ***the health system*** itself as an intermediary determinant because it addresses differences in exposure and vulnerability not only through the issue of access to care but also in the promotion of intersectoral action to improve health status.

Social cohesion and **social capital** are cross-cutting determinants of health placed across the structural and intermediary determinants, with features that link it to both. The concepts of social cohesion and "social capital" have been among the most widely discussed in the social sciences and social epidemiology, it is discussed further in this

thesis. Influential researchers have proclaimed social capital a key factor in shaping population health (42).

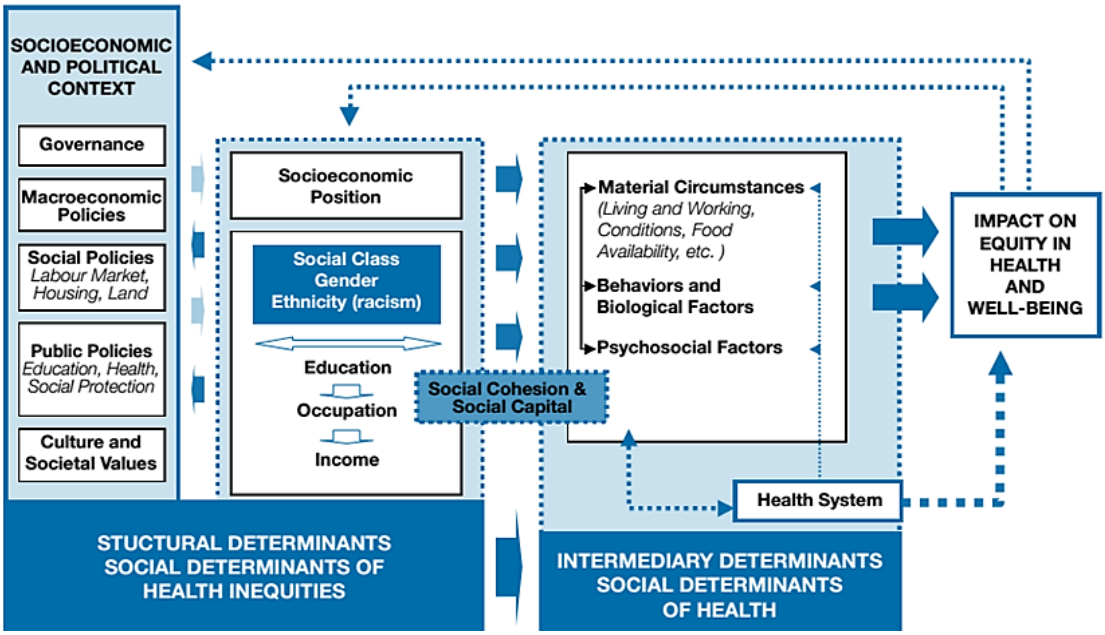

Figure 3. A Conceptual Framework for Action on the Social Determinants of Health. Source: WHO Social Determinants of Health Discussion (41)

2.3. The Social Determinants of Health Approach and immigrants' health

The health of migrant groups has been extensively studied in the past. However, studies about health inequalities between migrants and majority population still face a fundamental challenge: there is not yet a broadly accepted comprehensive model for the study of migrant health (79). Several conceptual models to study migrant health exist, focused mainly on migrants from low-income countries who migrate to high-income countries. These models include: "the healthy migrant effect," "the health transition model," and "the life-course epidemiology" models (79), the last is included in the SDOH approach as a mechanism through which these determinants influence health (41). This Chapter examines first the approaches used in the study of immigrants' health research at present and ends with a broader examination of immigration through the social determinant of health framework.

2.3.1. The Healthy Migrant Effect or Paradox

The healthy migrant effect explains how newly arrived immigrants are healthier compared to locals with similar socio-demographic characteristics (95, 105, 108, 133), this effect persists even for decades after their migration and then it is frequently observed to deteriorate with increasing length of residence. The causes of these health advantages, which can exist despite social deprivation, can be attributed to the positive

“self-selection hypothesis.” It establishes that persons who are particularly healthy are more likely to migrate and cope with the risks of migration to a foreign country. For instance, young migrants whose primary goal is to find work are usually occupied in high-physical demanding manual jobs; this is a labor-related positive health selection. Those migrants who are the sick and old return to their country of origin the so-called “salmon bias” (28, 134-137), thus immigrant populations often have low mortality rates, and this is underestimated (137).

2.3.2. Migration as a health transition

Immigrant populations tend to experience lower mortality rates from common cancers, cardiovascular disease, and diabetes, compared to the non-migrant populations (136). This mortality advantage can be explained by the migration as a health transition model as follows. Immigrants from low-income countries move from a society in an earlier phase of the health transition to a society in a more advanced phase. This migrant population experiences an unusually rapid health transition, which affects their health status. This health transition has two components. The therapeutic component which refers to the quickly decrease after migration in mortality due to infections, and also in maternal and child mortality, this is due to better health care in the host country compared with the country of origin. The risk factor component refers to the decrease in the risk of infectious disease due to better hygiene and environmental conditions (e.g., safe drinking water supply, nutrition). Nevertheless, at the same time, new risk factors for chronic diseases (eg., cancer, cardiovascular disease, diabetes) emerge, such as smoking, western nutritional habits, and physical inactivity (135, 136). Therefore; the longer immigrants stay in host-countries, the more their health will resemble that of the native population and the “healthy immigrant effect” decreases or disappear, this was described as the “paradox of assimilation” (138, 139).

2.3.3. The Social Determinants of Migrants’ Health (SDOMH) and the Life-Course Approach

The SDOH approach represents a broader framework to analyze the health of immigrants. The term Social Determinants of Migrant Health (SDOMH) (80) is used to underscore the SDOH, especially the structural factors that shape the health and well-being of migrants (77). It is also necessary under this framework to add the “life-course approach” (41). Adopting a life-course perspective focuses attention on how the SDOH operate at every level of life development—early childhood, childhood, adolescence, and adulthood—both to immediately influence health and to provide the basis for health

or illness later in life (41). This approach shows the different exposures of first-generation migrants along the three migratory phases: in the country of origin, during migration and in the host country (1, 136, 139, 140). Some researchers argue for including the return phase, as there has been a diversification of migratory behavior ranging from a short term and long term residence, permanent migration, multi-stage migration itineraries and return to the point of origin (1, 77, 141). Researchers also argue for taking into account how immigrants move and live between the host country and the country of origin from a transnational perspective (1). The SDOH have to be seen as ***cumulative factors*** of inequality in sending and host countries. For instance, a poorer socio-economic environment in childhood and growth affects migrant health long before migration. Also, the presence after migration of chronic exposure to work hazards, poor living conditions, discrimination, separation from relatives and friends, and poor integration in the host society might affect immigrants' health. These mechanisms are well recognized as causal factors of racial and ethnic inequalities in health which affect the health not only of migrants themselves but also their next generations (80, 134, 142).

2.4. What is Social exclusion ?

2.4.1. Origins and the evolution of the concept of Social Exclusion

Social exclusion is a notion related to a series of historical economic, political, and social system changes in the last decades in Europe, in particular with the evolution in the Welfare State, and recently to Globalization (143). The current use of the term was originated in France in the 60s, and 70s with the study of the marginalized and " the excluded" groups from the Society (144), and appearing in the French social policy in the 80s, referring mainly to people excluded from the social insurance system (145). The term began to be used in the early treaties of the European Commission, where a complete definition emerges, as follows:

> *"Social exclusion refers to the multiple and changing factors resulting in people being excluded from the normal exchanges, practices and rights of modern society. Poverty is one of the most obvious factors, but social exclusion also refers to inadequate rights in housing, education, health and access to services…..The Commission believes that a fatalistic acceptance of social exclusion must be rejected, and that all Community citizens have a right to the respect of human dignity"* (146).

The concept of Social Inclusion also came to the debate in the 80s (147). Sen (148) stated that "Inclusion is characterized by a society's widely shared social experience

and active participation, by broad equality of opportunities and life chances for individuals and by the achievement of a basic level of well-being for all citizens". Therefore, social inclusion is related to the ideal of social cohesion. Social inclusion is often equated with participation and interventions focus on increasing individual capacity for integration (93), this is the case for EU (124, 149) and UN (150) Policies and strategies. Concerning Migration Policies, social inclusion conceptions – usually referred to the efforts society makes to allow minorities to participate (151)- emerged in the 1980s to avoid the "assimilation" orientations of immigrant integration associated with monocultural notions of integration (147). Also, these conceptions highlighted that integration affects and involves the whole society and not only immigrants because members of that society integrate into a new multicultural environment (152).

Besides, social exclusion it is not the converse of social inclusion, as mentioned by Galabuzzi (153) "there are very few people who are excluded in all dimensions at once, there are many more people who are socially excluded in some respects both processes". Thus, social exclusion and social inclusion (SE/SI) are dynamic processes and both can exist together (150).

Over the years, social exclusion concept spread to other countries and has attracted the attention of scholars and policymakers; as a consequence, many concepts have emerged. On the one hand, to explain which groups are at risk of exclusion; the dimensions of social exclusion; the states associated with exclusion; the processes involved, the individual to global levels at which they operate; and the relevant actors involved (83) . On the other hand, to analyze how excluded groups could be better integrated into accepted standards of social, economic, political and cultural dimensions and at various levels (154).

In this thesis, the social exclusion definition used is from the Social Exclusion Knowledge Network (SEKN) of the Commission on Social Determinants of Health (CSDH) and the World Health Organization (WHO), which is: "Exclusion consists of dynamic, multi-dimensional processes driven by unequal power relationships. These operate along and interact across four dimensions - cultural, economic, political and social – and at different levels including individuals, groups, households, communities, countries and global regions. Exclusionary processes contribute to health inequalities by creating a continuum of inclusion/exclusion. This continuum is characterized by an unjust distribution of resources and different capabilities and rights required to: create the conditions necessary for entire populations to meet and exceed basic needs, enable participatory and cohesive social systems, value diversity, guarantee peace and human rights, and sustain environmental systems" (87).

The distinctive features of Social Exclusion /Inclusion previously described allow integrating the concept and its theoretical model within the SDOH framework, recognizing that the relational dimensions of Social Exclusion /Inclusion are interconnected and overlapping at household, group, community, country, and global levels" (93). Another important feature of social exclusion is the agency, which refers to the fact that the excluding is done by someone or something, which can be the Government or private institutions, the social environment or the individual itself (86).

2.4.2. Theoretical Framework of Social Exclusion

The SEKN developed a conceptual model for Social Exclusion/Inclusion based on the work of Sarah Escorel(155) (cited in(87)). This model contains four dimensions of continuum Social Exclusion/Inclusion: social, economic, political, and cultural dimensions which are interconnected and overlap.

The SEKN multidimensional approach has the following advantages(85, 87):

a) it provides a comprehensive approach to understanding the SDOH and the interactions among them;

b) it moves the debate of SE/I beyond the policy discourses in which social exclusion is typically a synonym for poverty and disadvantage, providing a wider lens to understand the causes and consequences of unequal power relationships;

c) focus attention on the interaction between multiple exclusionary processes operating across systems of social stratification associated with gender, ethnicity, migration status, social class;

d) makes explicit the links between social exclusion and a 'rights' approach to the social determinants of health;

f) recognizes that there is an inclusion/exclusion continuum process;

g) analyzes relationships at different levels (from individual to global). The model is schematized in fig.4, and the core dimensions of it are described below.

The Social dimension is constituted by proximal relationships of support and solidarity (e.g., friendship, kinship, family, clan, neighborhood, community, social movements) that generate a sense of belonging within social systems. Along with this dimension, social bonds are strengthened or weakened (87).

The Political dimension is constituted by power dynamics in relationships which generate unequal patterns of formal rights embedded in legislation, Constitutions, Policies, practices and the conditions in which rights they are exercised. They include access to safe water, sanitation, shelter, transport, power,

and services such as health care, education, and **social protection,** and to have access to services. (87). Along with this dimension, there is also an **unequal distribution of opportunities to participate in public life, to express desires and interests**, **political engagement or participation** (85)**.**

The Cultural dimension is constituted by the extent to which distinct values, norms and ways of living are accepted and respected. At one extreme along this dimension diversity is accepted in all its richness, and at the other, there are extreme situations of stigma and discrimination (87).

The Economic dimension is constituted by access to and distribution of material resources necessary to sustain life (e.g., income, employment, housing, land, working conditions, livelihoods) (87).

Exclusionary processes are located within social systems (e.g., the family, households, nation-states, global regions) shown in the central square of the diagram. These processes and their impact on health inequalities operate in the context of pre-determined biological determinants (shown to the left of the fig.4).

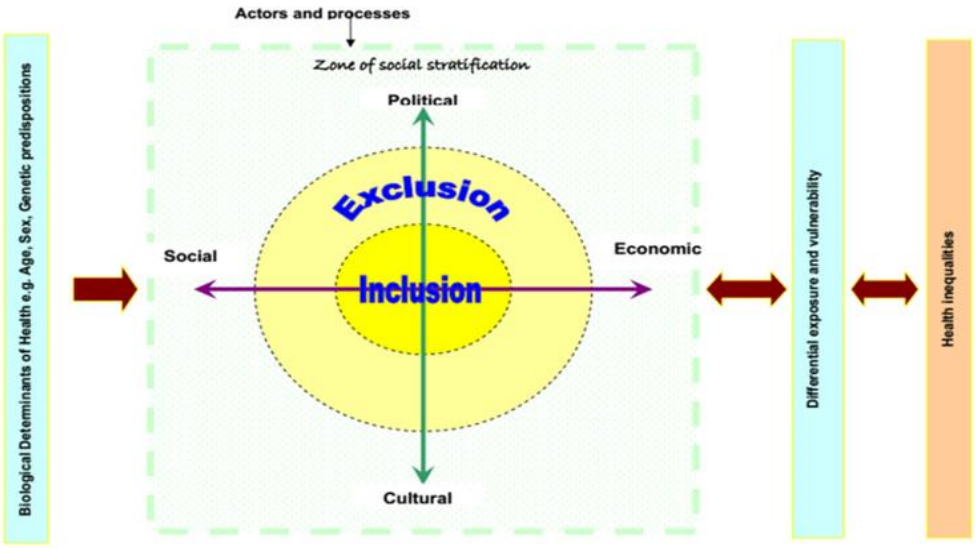

Figure 4. Theoretical Framework of Social Exclusion and Health

Within social systems interactions between the four dimensions – social, political, economic and cultural - of social exclusion, generate hierarchical systems of social stratification by gender, ethnicity, class, race, ability, and age. Moving to the right of the diagram, these stratification systems, and the unequal access to power and resources embedded in them, lead to differential exposure to health-damaging circumstances. While at the same time they reduce people's capacity (biological, social, psychological

and economic) to protect themselves from such circumstances, and restrict their access to health and other services essential to health protection and promotion. These processes create health inequalities and as the arrows suggest feedback to increase inequities in exposures and protective capacities and intensify systems of social stratification further (87).

As it is established in the SEKN model, the pathways linking the impact of exclusionary processes to health inequalities are both constitutive and instrumental. Constitutive, because having the right and freedom to participate in economic, social, political and cultural relationships has intrinsic value, and the experience of limited participation can be expected to have negative impacts on health and wellbeing. Instrumentally, limited participation in these relationships results in other deprivations: for example, being excluded from the labor market or included on disadvantaged terms will lead to low income, which can, in turn, lead to poor nutrition, and housing problems which contribute to ill health (87).

2.4.3. Social Exclusion and overlapping with other concepts

One of the issues when defining social exclusion is the confusion with other related concepts which are often used as its synonymous like poverty, deprivation, marginalization, and vulnerability (143). The meaning of one in relation to the other may change according to the context and different disciplines (156).

Poverty was first meant a deficiency in the material means of subsistence. In purely economic terms, is defined as " whether households or individuals have enough resources or abilities today to meet their needs" (157), meaning a lack of income or low income, and it is associated with the concept of social class (143). Thus, measurement of poverty usually rely on a threshold separating the poor and the non-poor; and an index that expresses how far from the threshold the poor are (158). In this sense, there has been a move from defining an absolute poverty line, denoting a minimum standard of living that is similar in any country at any time, to a relative poverty line set for example as a proportion of the national average income at a point in time (87). Also, relative income measures fix a threshold relative to a typical standard in society; recent OECD work and Poverty indicators EU has mainly relied on a threshold set at half of median equivalised household disposable income (158, 159).

It has been argued that poverty is not a static phenomenon and definitions that classify people as poor and non-poor are considered to be discrete rather than continuous (158, 160). As a result, it focuses on some indicators without paying attention to paths and processes that lead to poverty (e.g., a person earning just above

the poverty threshold might be no better off than someone just below the threshold) (160). Thus, in alternative approaches “non-monetary” measures have been added (Table1). Most poverty measures are “monetary and input based” where income is measured in absolute or relative thresholds and “not- monetary and input based” where we have access to employment and public services. Measures focusing on “outcomes” concentrate on the final conditions of individuals rather than on the means required to achieve those conditions. “monetary and output based” are measured through basic needs which consider whether actual household expenditures fall short of some minimum level income (158, 161).

Moreover, “non-monetary and output based” where we find **material deprivation** which has a multidimensional conceptualization and itself can be measured through objective and subjective dimensions that interact. The objective dimensions are the satisfaction of basic needs, capacity to afford leisure and social activities, consumption of durables (phones, microwave oven), housing conditions, education (158, 161). Subjective dimensions refer to people's appreciation of their own conditions such as the appreciation of own personal conditions, regarding their financial stress and ability to make ends meet. Other measures include the characteristics of the social environment where individuals live (e.g., exposure to specific hazards in the neighborhood, fears of crime and availability of public services such as schools, and hospitals), and social networks of individuals (e.g., ability to rely on support from others in case of need) (158).

	Input-based methods (indirect measures)	*Outcome-based methods (direct measures)*
Monetary measures	- Income measures, budget-standard approach	- Basic needs measures
Non-monetary measures	- Access to employment, public services	- Material deprivation measures, capability indicators (*e.g.* life-expectancy, literacy)

Source: OECD.

Table 1.Alternative approaches in the measurement of poverty

Other authors pointed out the distinctions between poverty, material deprivation, and social exclusion (83, 143, 154, 162, 163). For instance, Barnes described the **one-dimensional** character of poverty and the **multidimensional** concept of material deprivation including physic needs as basic needs measures and material needs as subjective measures. However, Barnes (table 2) differentiate the concept of social exclusion as it “evokes a multi-dimensional notion of participation in society, involving a combination of physical, material, relational and societal needs over a period of time” (162). Therefore, social exclusion in its multidimensional concept intends to go beyond

the emphasis on material resources, and focus on the various dimensions in which personal, social, political and economic opportunities are lacking (143).

As it has seen before, poverty and material deprivation refer to a **static condition** relating to a given income situation or standard consumption pattern at a particular moment. Social exclusion is a **dynamic process** through which people become excluded (163), in various ways and to differing degrees over time (154), and in most cases with a bidirectional relationship with health (164). Poverty and material deprivation are related to the **distribution** of economic aspects of disadvantage in income or consumption (distributional focus) (163). Instead, social exclusion concerns **relational** and socio-cultural aspects such as solidarity, social bonds and participation, integration, engagement, discrimination, and norms of social citizenship (163), and it is the product of unequal power relations in social interactions (154). However, there is rarely a complete lack of access, so there is some arbitrariness in drawing the line where social exclusion is, and who is perceived to be excluded (154).

Poverty	**Deprivation**	**Social exclusion**
One-dimensional	Multi-dimensional	Multi-dimensional
Physical needs	Physical needs Material needs	Physical needs Material needs Societal participation
Distributional	Distributional	Distributional Relational
Static	Static	Dynamic
Individual Household	Individual Household	Individual Household Community

Source: Barnes (2005)

Table 2. Comparison of poverty, deprivation, and social exclusion.

Another term that overlaps with social exclusion is **vulnerability** which together with **marginalization** could be used as synonymous with it. In Castel's formulation (165) (cited in (143)) it is not understood as an individual weakness, but as a range of situations that human groups share in which the resources and capabilities to avoid or escape from them are unequally distributed. In other words, in a line where one extreme would be complete **marginalization** (used as a synonym of social exclusion), and the other extreme is complete social inclusion, the term **vulnerability** would be placed in the middle where it is relational and employment instability and weak social protection (143).

2.4.4. From theory to practice and measurement of Social Exclusion

There is much disagreement amongst authors on the concepts and measurement of social exclusion (83), although there is an agreement that social exclusion is multidimensional encompassing the social, political, cultural and economic dimensions which operate at various social levels (154, 166). Also that at the societal level, it reflects inadequate social cohesion or integration; and at the individual level, it refers to the incapacity to participate in normatively expected social activities and to build meaning ful social relations (167). There are also agreements on the dynamic and relational characteristics (87, 93, 144, 147) which were described in detail previously. Thus, given the complexity of the concept, there are not a single set of indicators to measure social exclusion. As pointed out by the SEKN "dedicated indicators of social exclusion have also been the object of methodological criticism, for example, failing to distinguish between risk factors and outcomes, emphasizing economic and social dimensions while giving less attention to political and cultural dimensions" (87).

Dimensions and indicators for analyzing and measuring the Social Inclusion and/or integration of immigrants within host societies have also been proposed (20, 34, 93, 124). As it has seen before in the theoretical framework, very often exclusion processes in one dimension affect those in other dimensions (87, 93). For instance, unemployment might lead to loss of social contacts, loss of income, poor housing conditions, insecure living environment, and reduced access to health care. All of these factors affect health negatively directly or indirectly. Health risks thus tend to accumulate in socially excluded individuals and groups (86).

In this thesis, the measurement of Social Exclusion /Inclusion and the use of the main indicators were based on a literature review on Social Exclusion and its association with health outcomes, in the European context and in general and immigrant populations (in Chapter 3). Key documents and reports on the measurement of Social Exclusion/Inclusion (86, 163, 166, 168), and on the specific measurement in the migrant population were also reviewed (20, 93, 124, 143). Therefore; the indicators were selected based on the independent association of each one of the SE dimensions with health outcomes, and also when it was the case, indicators to measure social exclusion as a whole construct.

2.5. Social Capital and the linkages with Social Exclusion within the Social Determinants of Health Framework

As described above in the SEKN theoretical framework, the social dimension of social exclusion is constituted by proximal relationships of support and solidarity, such

as friendship, family, neighborhood, community, social movements, which generate a sense of belonging within social systems, and where social bonds are strengthened or weakened (87). These notions lead to the discussion of the concept of social capital and its relational linkage with social exclusion. The following section will discuss how social capital help to highlight and articulate the centrality of social relational processes in the genesis of social/economic/material and health advantage/disadvantage (164). Finally, a multi-level framework of social capital proposed by Mikael Rostila used in this thesis will be described.

2.5.1. The concept of Social capital

Social capital is a concept with deep roots in the social sciences, although this concept has been used in economics, education, political science, health, and social sciences. At its core, social capital is the value of social networks to individuals and society (169, 170). It was defined by Bourdieu (171) as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition". This concept has two elements: first, the relationship itself, which allows individuals to claim access to resources possessed by other members of the network, and second, the amount and quality of this resources. Putnam (170) extended this concept and suggested that it refers to features of social organizations, such as networks, norms, and trust that facilitate action and cooperation for mutual benefit. Based on Putnam's work, the concept of **social cohesion** focuses on citizenship practice, meaning the access to fundamental rights of an individual in a country and how the lack of it produces **social exclusion** of particular groups. Thus, social cohesion represents the absence of exclusion and contrast between a **sense of belonging to society** versus isolation, participation versus non-engagement, recognition versus rejection. It is increasingly cited in the literature that social cohesion links with the dependence on social capital maintenance and formation (172).

From these conceptualizations, there has been considerable debate about the definition of social capital (173), with the significant controversy around the use of different theories and different units of analysis (169); hence it is one of the most criticized concepts in the social and health-related sciences, depending on the background disciplines of the authors (173). The consequence of these differences in opinion is the emerge of the two levels of social capital –the individual and the collective- (89). However; as Kawachi and Villalonga-Olives argue (173) in accordance with other authors (169, 174, 175), the critical consideration is that the definition of social capital is not exclusively individually or collectively focused, it is both. Besides,

the basis for the generation of resources at both levels is a social network characterized by social trust. Therefore, social capital has a multi-level character, and its principal components are: a) close social contacts with family relatives, and friends; b) exchange of social resources in networks, c) general trust and solidarity between citizens in society; and d) membership in voluntary associations; and trust in the state and its institutions (173).

2.5.2. A multi-level conceptual framework of Social Capital in Health: Individual and Collective social capital

In this thesis, the social dimension of social exclusion is conceptualized through a multi-level conceptual framework of social capital in health research proposed by Rostila (89) showed in figure 5. This model has two dimensions: **a structural** (quantitative) **and a cognitive** (qualitative), and the ***resources*** involved in them which constitute preconditions for the generation of social capital.

The structural dimension indicates that all forms of social contacts such as types of social relations, the structure of social networks, and time spent on social contacts are the base for the generation of social capital. Therefore, without social relations, an individual cannot possess social capital, maintain and reproduce it. **Informal social contacts** describe cooperative and trusting relations between members of a network who see themselves as similar and share a common social identity, such as social contacts with family, relatives, and friends. They overlap with concepts of "bonding and strong ties" used by other authors (170, 173, 174). ***Formal social contacts*** concern social relations created in voluntary associations, working life and other official institutions. Such contacts are good links to external assets and enable information diffusion and have similarities with the concepts of ***"bridging or weak ties"*** (170, 173, 174).

The cognitive dimension relates to *the degree of social trust that emerges in social relations*. ***Thick trust*** refers to trust embedded in personal relations that are strong, frequent, and nested in more extensive networks, while ***thin trust*** refers to a general trust in people with whom an individual is not necessarily acquainted, and trust in institutions**.**

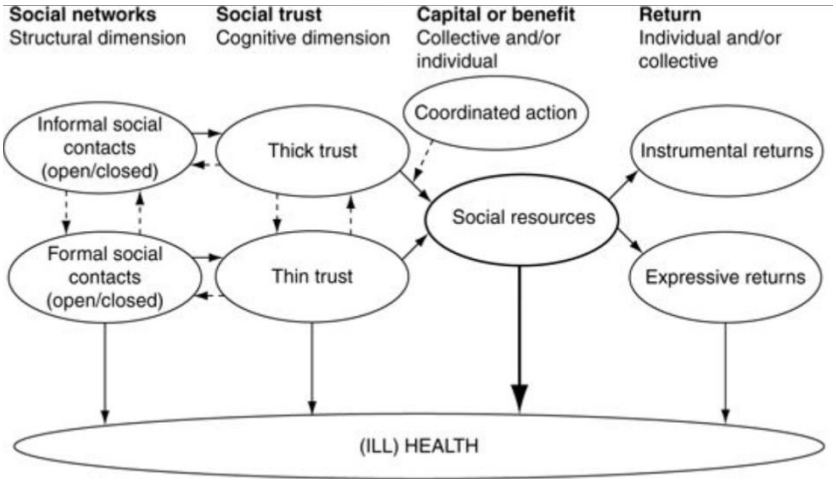

Figure 5.. Rostila 2013.A multi-level conceptual framework of social capital in health research **(89)**

Social resources are considered the core of social capital, representing the "capital" embedded in social networks and social structures, and possibly further providing both individual and collective returns. However, it is the type and degree of social trust that facilitates a reciprocal exchange of social resources. There are four broad types of social resources: **a)informational support**, that refers to the various types of knowledge, information, and advice that are exchanged in an individual's network; **b) emotional support** fosters feelings of comfort and leads an individual to believe that he or she is respected, admired, and loved, and that others are available to provide love, care, security. It is most often provided by a confidant or intimate other; **c) instrumental support** includes help, aid, or assistance with tangible needs, such as aid in labor, money, or kind; and **d)appraisal support** refers to help in decision-making, giving appropriate feedback, and deciding which course of action to take.

2.5.3. The link between social capital and other social exclusion dimensions: its relevance for immigrant populations

As seen before, social capital is a crosscutting social determinant of health placed across the structural and intermediary determinants, with features that link it to both (41), and it might play an important role in producing health inequalities between social groups (176, 177). Consequently, social capital is related to the theoretical explanations linking social position and health inequalities. First, the **neo-material pathway** in which the effect of income inequality on health reflects a lack of resources held by individuals and systematic under-investments across a wide range of

community infrastructure; and the **psychosocial pathway** in which people's perception and experience of social status lead to stress and poor health (41).

Two models explain the relationship between social networks and health(178-181). First, **the stress-buffering model** which suggests that individuals' social network properties are related to health only for people under stress, contributing to the reduction of stressful life situations and events on health. For instance, stress seems to suppress the immune system, and positive social networks might reverse this effect (182). Second, **the main or direct -effect model** which suggests that social networks have a beneficial impact on health irrespective of whether persons are under stress. Therefore, social networks bring positive psychological states such as positive feelings, sense of belonging, and recognition, which are thought to have a positive effect on health (183). They also provide material resources such as food, clothing, and housing, that limit exposure to risk factors and prevent disease; this is especially important for immigrants who are in danger of suffering lack of resources in the host country (178, 184). Besides, social networks provide multiple sources of information, which may influence health-relevant behaviors such adopting lifestyles, health care utilization patterns, treatment adherence on vulnerable subgroups of the population, such as immigrants, adolescents, ethnic and religious minorities (89, 185). On the contrary, isolation causes disease and promotes negative feelings and decreases feelings of control and self-esteem and related to poor perceived mental and physical health (89, 90, 102, 103, 185-188), and risk behaviors (189-191)

The extent in which social capital leads to inclusion or exclusion, advantage or disadvantage among immigrant populations, represents one of the central debates in the literature at present (192). A dependency effect of social capital and socioeconomic health inequalities has been well described, which refers to the better self-rated health of high-income individuals who profit most from high social capital than disadvantaged groups who with lower social capital and poorer health (177, 188, 193, 194). Therefore, immigrants are a particularly vulnerable group as they had left a considerable part of their social networks in their home countries and it might take several years to establish new social networks or develop confidence in their host countries (195). It is in this sense the process of rebuilding bonding social capital has been considered as an important "first step" for new immigrants in a new society (177, 195). However, it has been an issue of debate whether bonding social capital acts as a barrier to bridging capital or rather is conducive to building bridges with people outside the group and achieving a cohesive society (192). The aspects of this debate refer to the role of ethnic networks in migrant's economic activity, through mobilizing social capital from

their networks to help them find jobs and this result in labor market integration. Thus, social capital becomes into economic capital and contribute to social inclusion.

Also, migrants' networks may increase with the length of residence in the new society (195) and may differ by gender in their developing, for instance, they can be formed around schools, home, or employment (192). However, other authors mention that social capital may also contribute to negative externalities (89, 196). According to the so-called "Homophily Principle", the preference to interact with similar others produces network boundaries (89). Nonetheless, as Amin (cited in Kindler et al. (192)) argues, the focus should not be whether there is something wrong with a community that produces bonding or bridging social capital, the focus should be on "how community takes on different meanings in different conditions of economic and social well-being and different settings" (197).

In addition, social capital represents not only one dimension of the social exclusion construct, but it also has relational linkages with its other dimensions, as social capital provides a buffer against stress and other economic and cultural negative influences on health. It can also be a buffer against the negative impacts of discrimination or stigmatization on health in areas with a high density of ethnic minorities (176). Thus, individual and collective social capital has been associated with better self-rated health in individuals within the lowest-income or deprived groups, and in minority populations (177, 193).

Chapter 3: Literature Review: Social Exclusion and Health in General and Immigrant Populations in Europe

3.1. Introduction

One of the most significant developments in health and health policy is the emergence of the global 'health equity' approach concerned with the Social Determinants of Health (SDOH), which in recent decades have gained the attention of researchers and policy-makers all over the world (68). Social inequalities in health are unfair and avoidable variations in health experience among different population groups (e.g., according to social status (SES), disability, age, gender or ethnicity) that result in poorer health among the most disadvantaged groups (69-71). Therefore, social inequalities in health arise because of inequalities in the conditions of daily life and the drivers that give rise to them: differences in power, money, and resources (42).

The concept of social exclusion is increasingly used in the analysis of complex mechanisms and processes that enable individuals and households to be part of their society, going beyond the reductionist economic view that associates social exclusion to lack or insufficient income, thus, opening the perspective to other dimensions (81, 82). The WHO Social Exclusion Knowledge Network (SEKN) defines social exclusion as ''dynamic multidimensional processes driven by unequal power relationships interacting across four main dimensions - economic, political, social and cultural - and at different levels including individual, household, group, community, country and global''. Besides, the experience of being restricted to participate in these dimensions can be expected to increase exposure and vulnerability to adverse health outcomes (85).

Therefore, from the SDOH approach, social exclusion is considered a significant factor in the causation and maintenance of health inequalities (86-89). Not only, the social exclusion related factors such as material deprivation, inadequate housing, few social contacts, and discrimination have negative impacts on health, but also the experience of being excluded might lead to poor health through psychosocial stress mechanisms (82, 87, 90). Besides, the causal direction from social inequities to social exclusion and health inequities is multidirectional and mutually reinforcing in feedback loops (91), as poor physical and mental health, in turn, can be a barrier to social and economic participation (82). Besides, the cumulative nature of social exclusion is linked to the life-course model proposed by the SDOH approach, as each linkage between the social exclusion dimensions deepens a person's negative experience and the depth of social exclusion is reinforced through the life cycle (92).

There is much disagreement amongst authors on the concepts and measurement of social exclusion (83), although there is an agreement that social exclusion is multidimensional encompassing the social, political, cultural and economic dimensions which operate at various social levels (154, 166). There are also agreements on dynamic and relational characteristics (87, 93, 144, 147). Thus, given the complexity of the concept, there are not a single set of indicators to measure social exclusion. As pointed out by the SEKN "dedicated indicators of social exclusion have also been the object of methodological criticism, for example, failing to distinguish between risk factors and outcomes, emphasizing economic and social dimensions while giving less attention to political and cultural dimensions" (87). Besides this general theoretical agreement, the empirical evidence on social exclusion and health outcomes is scarce in Europe.

There were three main aims for this literature review. First, to identify existing literature on the relationship between multidimensional social exclusion and health outcomes among the general and immigrant populations in Europe, and to examine key indicators for the measurement of social exclusion as a multidimensional concept. The second aim was to identify evidence on the independent associations between social exclusion dimensions –the economic, social, cultural, and political- and health outcomes among immigrant population in Europe, in order to outline a framework for the indicators selected in this thesis. Finally, the third purpose was to justify the importance of the study based on the identified knowledge gaps in the review and to clarify further the research questions that will be answered in this thesis.

Two scoping reviews were conducted to accomplish the aims of this literature review. There are threats to the validity of the reviews because a single coder conducted them. However, the methodological protocol proposed by Armstrong et al. (198), as well as the guidelines suggested by Peters et al. (199), were followed in order to reduce the subjectivity. Besides, more rigorous systematic reviews are still being published with solo authors, though larger review teams are more common (200).

The scoping review methodology was chosen because this type of review is of particular use when a body of literature has not yet been comprehensively reviewed or exhibits a broad or heterogeneous nature not amenable to a more accurate systematic review (198, 201). Scoping reviews do not aim to produce a critically appraised and synthesized result to a particular question, and instead aim to identify and map the available evidence. Thus, an assessment of methodological limitations or risk of bias of the evidence included is generally not performed (202).

This chapter is organized as follows. The first part presents a scoping review on the relationship between multidimensional social exclusion and health among the general and immigrant population living in Europe; the second part presents a scoping literature review on the independent associations between each social exclusion dimension and health among the immigrant population in Europe. The third part presents the summarizing, discussion and conclusion steps for both scoping reviews. The main characteristics are presented in tables 3, and 4 in the appendix, as well as the main results of each reviewed study in tables 11 and 14 in the Appendix A.

3.2. Multidimensional social exclusion and health among the general and immigrant populations in Europe

3.2.1. Methods : Stages of the Scoping Review

A scoping review was conducted to identify existing literature on the relationship between social exclusion and poor health among the general and immigrant populations residing in Europe.

3.2.2. Stage 1. Identification of the review question

The review question was: "What is known in the literature about the association between multidimensional social exclusion and health among the general and the immigrant population in Europe?.

This question was established based on the PECO (Population, Exposure, Comparison, Groups, and Outcome) criteria for standard systematic reviews. As often happens in scoping reviews this question was broad, and the definition of the comparison group was flexible (198, 201). Therefore, the populations were socially excluded vs. non-excluded individuals, economically active (aged 18 to 65 years) and native and foreign-born individuals in Europe. In the same way, the exposure definition was flexible according to the multidimensional concept of social exclusion as a whole construct and the presence of two or more of its independent dimensions. The outcome was health.

3.2.3. Stage 2. Identification of Relevant Searching

Electronic PubMed/Medline databases were searched systematically; Google Scholar was also used to find grey literature. The literature search was conducted between September 2017 and December 2018; the search was last updated in March 2019.

The search strategy in PubMed to answer the review question was conducted in advanced research option as follows: "social exclusion" OR "social inclusion" AND

health. The limits were established as follows: 10 years 2008-2018 (last updated in March 2019); languages: Spanish, Portuguese and English; article type: journal article; text availability: full text; age: 19 and more years.

The search strategy in Google Scholar was conducted using the advanced search as follows: with all the words: social exclusion AND health; the word occurs in the title: (allintitle: "social exclusion" AND health), date range: between 2008 and 2018 (last updated March 2019).

3.2.4. Stage 3. Screening- Inclusion Criteria

All articles and abstracts were reviewed by a single author for potential inclusion. and the following inclusion criteria were applied: a) original articles that concern with social exclusion b) articles analyzing at least two dimensions of social exclusion at once; c) social exclusion factors related to the Social Determinants of Health; d) written in Spanish or English; e) articles focused on general and immigrant population, as other vulnerable groups such as drugs abusers or mentally ill individuals might be socially excluded as a consequence of their health conditions, being this reverse causal directionality beyond the aim and the analysis of this review; f) articles focused on economically active individuals aged 18 to 65 years, this age constraint was a strategy for avoiding age influence on health outcomes; g) quantitative studies h) articles with data from Europe; and i) articles from 2008 to 2018, last updated on March 2019.

The exclusion criteria included: a) inaccessible articles; b) articles that did not include health outcomes; c) articles that did not include the target populations; d) systematic review articles, and scoping reviews; e) articles that were the authors' opinions, comments, editorials, letters or conferences reports; f) qualitative studies.

3.2.5. Stage 4. Scoping: Extracting and charting the results

As a result of the databases search strategy, a total of 676 articles were identified to answer the first review question: 509 through Pubmed/Medline and 167 through Google Scholar. This number was reduced to 53 after excluding duplicates and applying the inclusion criteria upon reviewing the titles and abstracts. Afterward, the articles were screened in full-text. Finally, a total of 17 articles were included in the scoping review.. This process is presented in a PRISMA flow diagram for the scoping review in figure 8. The information extracted from the studies was summarized Relevant sources were charted using the following column headings: lead author and publication year; aim; design and type of data; sample size and study population; independent variables; outcome variables; and conclusions. In another table, the main

results were summarized for each health outcome. The studies were also classified by categories: studies in the general and immigrant populations (Appendix A).

3.3. Independent associations between the social exclusion dimensions and health outcomes among immigrant population in Europe

3.3.1. Methods : Stages of the Scoping Review

A scoping review was conducted to identify existing literature on the independent associations between the dimensions of social exclusion and poor health among immigrant population residing in Europe.

3.3.2. Stage 1. Identification of the review question

The review question was: “What is known in the literature about the independent associations between the economic, social, cultural and political factors of social exclusion and health among the immigrant population in Europe?.

This question was established based on the PECO (Population, Exposure, Comparison, Groups, and Outcome) criteria for standard systematic reviews. The populations were socially excluded vs. non-excluded individuals, economically active (aged 18 to 65 years) and native and foreign-born individuals in Europe. In the same way, the exposure definition was flexible according to the independent dimensions of social exclusion. The outcome was health.

3.3.3. Stage 2. Identification of Relevant Searching

Electronic PubMed/Medline databases were searched systematically. The literature search was conducted between September 2017 and December 2018; the search was last updated in March 2019.

The search strategy in PubMed to answer the review question was conducted in blocks as follows: BLOCK A: Immigrants; BLOCK B: economic distress OR unemployment OR housing problems; BLOCK C: social support; BLOCK D: discrimination; BLOCK E: political participation OR citizenship; BLOCK F: health. The limits were established as follows: 10 years 2008-2018 (last updated in March 2019); languages: Spanish, Portuguese and English; article type: journal article; text availability: full text; age: 19 and more years.

3.3.4. Stage 3. Screening- Inclusion Criteria

All articles and abstracts were reviewed by a single author for potential inclusion. and the following inclusion criteria were applied: a) original articles that concern with the social exclusion independent dimensions; b) social exclusion factors within the

Social Determinants of Health approach; c) articles focused on the immigrant population; d) articles focused on economically active individuals aged 18 to 65 years, this age constraint was a strategy for avoiding age influence on health outcomes; e) quantitative studies f) articles with data from Europe; and i) articles from 2008 to 2018, last updated on March 2019.

The exclusion criteria included: a) inaccessible articles; b) articles that did not include health outcomes; c) articles that did not include the target populations; d)systematic review articles, and scoping reviews; e) articles that were the authors' opinions, comments, editorials, letters or conferences reports; f) qualitative studies.

A total of 727 articles were identified. This number was reduced to 117 after applying the inclusion criteria upon reviewing the titles and abstracts. This process is presented in a PRISMA flow diagram for the scoping review in figure 8. The information extracted from the studies was summarized. The Relevant sources were charted using the following column headings: lead author and publication year; aim; design and type of data; sample size and study population; independent variables; outcome variables; and conclusions. In another table, the main results were summarized for each health outcome. The studies were also classified by categories: studies in the general and immigrant populations (tables 11-14 Appendix B).

3.4. Summarizing the results of the Scoping Reviews

3.4.1. Studies that analyze multidimensional social exclusion and health among the general and immigrant populations in Europe

A total of 19 articles were included in this scoping review. Out of them, two studies used data from the European Social Survey waves 2006/2007 and 2012; two studies used data from the European Quality of Life Survey waves 2007 and 2012; one study used data from the European Union Survey on Living Conditions (2011); three studies used secondary data from the Netherlands, two studies from Sweden, eight studies from Spain, and one from England. Regarding the design of the studies, 17 were cross-sectional studies, and two used a longitudinal design. Eight studies stratified the analysis by sex. The main characteristics and results are summarized in tables 11-14 in the Appendix A.

Eight studies used a multidimensional construct for Social Exclusion and Integration; out of them, three studies were focused on the general population (82, 86, 203), five studies were focused on the immigrant population (95, 96, 204, 205), and four studies used a structural indicator for Social Exclusion/Integration in the immigrant population (95, 96, 205, 206).

Eleven studies analyzed two or more dimensions of social exclusion at once. Regarding the study populations, four studies were focused on the immigrant population (67, 98, 105, 207), and eight studies focused on the general population (88, 97, 101, 103, 106, 175, 208), although five of these studies included the country of origin of the individuals (88, 97, 103, 106, 208).

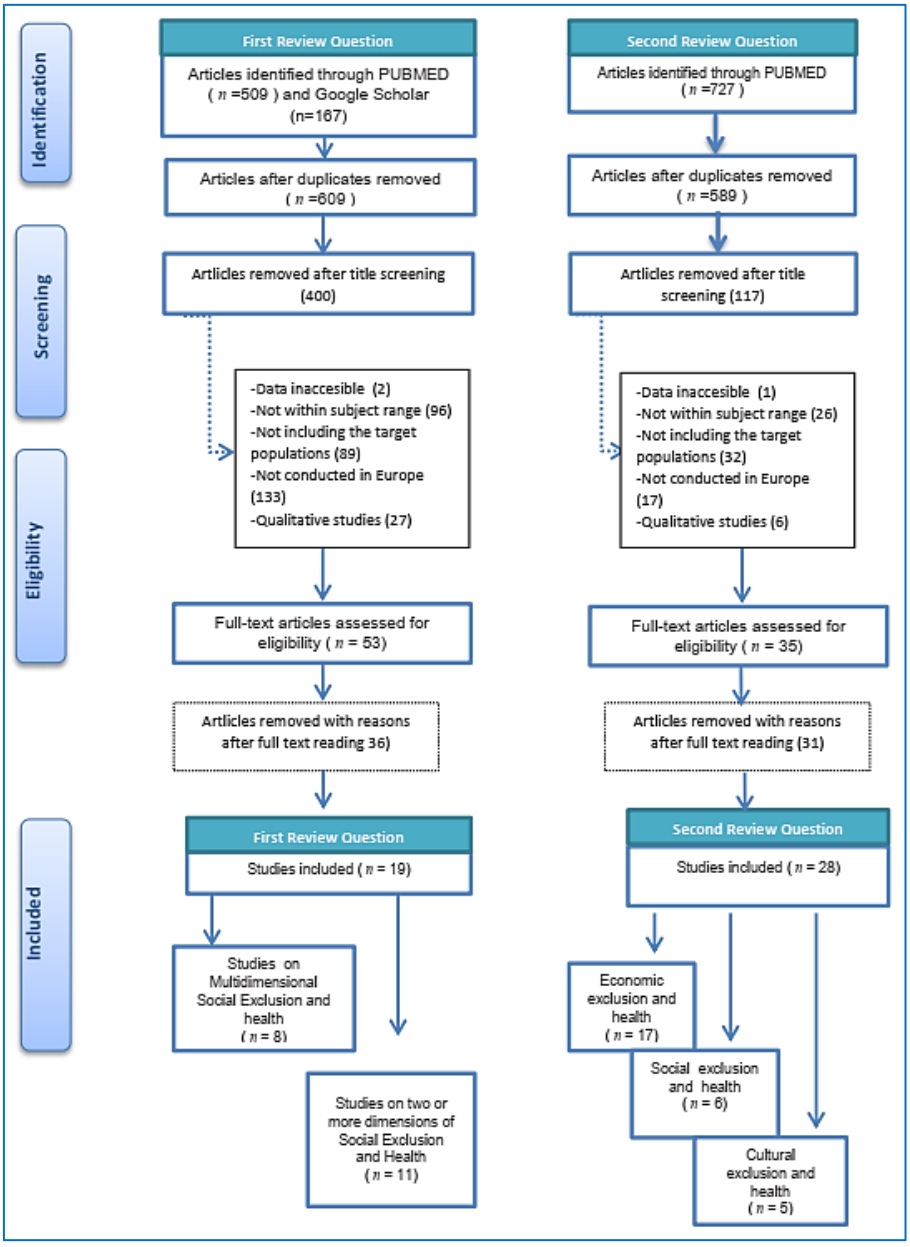

Figure 6. PRISMA chart of the scoping reviews

3.4.1.1. Studies that analyze multidimensional social exclusion among the general population

This review found two studies which constructed and validated multidimensional measures for social exclusion (SE) using the Social Determinants of Health (SDOH) approach. In the first study, Van Bergen et al. (86) demonstrated that SE could be measured with existing local public health surveys data in four Dutch cities. They constructed a composite four-dimensional index including a) **"lack of normative integration"** (no having respect for people, not saying "thank you"); b) **"limited social participation"** (social isolation, limited participation in social networks); c) **"material deprivation"** (debts, basic goods, and services, such as washing machine or hot meal); and d) **"inadequate access to social rights"** (having access to healthcare, sufficient education, and a proper living environment).

In the second study, Van Bergen et al. (82) constructed and validated a Dutch national index for SE based on health surveys employing 15 available items. The dimensions were the same as in their previous study, but other indicators were added, they were: a) **"limited social participation"** (e.g., experiencing a general sense of emptiness, the existence of people to lean on when having problems, missing having people around); b) **"material deprivation"** (the difficulty during the previous year in getting by on the household income or enough money to heat home, to pay for memberships, to visit others, and to meet unexpected expenses); c) **"inadequate access to social rights"** (e.g., people in the neighborhood that generally do not get along with each other, help each other, can be trusted, poor satisfaction with housing); and d**) "lack of normative integration"** (giving money to good causes, doing something for the neighbors, putting glass items in the bottle bank, believing that work is just a way to earn money). They concluded that the SE index for health surveys offers a uniform, reliable, valid and efficient means of assessing social exclusion and its underlying dimensions in public health.

Bryngelson (203), examined the relationship between long-term sickness absence (60 days) and social exclusion among the general population in Sweden. The study included measures of social exclusion dimensions: the economic variable was "having no cash margin"; the political variable was "not voling in the last election"; the social variables were "having no close friends" and "being single or unmarried". Multidimensional variables were obtained by combaining the previous. The study found that both women and men have higher odds of having no excess cash (''cash margins'') after their long-term sickness absence, compared with people with no such sickness absence. Women seem more likely to have no cash margins combined with

being single/unmarried and having no close friends after long-term sickness absence, than do women without such sick-listing. The results indicate a slight mediating effect of employment status on the odds ratios for these economic and social conditions. The author concluded that long-term sickness absence increases the risk of adverse economic and social conditions among individuals. However, that these conditions could be seen as indicators of social exclusion was more doubtful.

3.4.1.2. Studies that analyze the association between multidimensional social exclusion and health inequalities among the immigrant population.

Structural or contextual indicators of multidimensional Social Exclusion/ Integration have been less analyzed in Europe, in this review four studies analyzed the relation between the national immigrant integration policy and health inequalities between immigrant and native populations (95, 205, 206), and health outccomes in the immigrant population (96).

Malmusi et al. (205), analyzed whether country integration policy models were related to inequalities by immigrant status in depressive symptoms in Europe, based on data from 17 countries in the sixth wave of the European Social Survey (2012). Countries were grouped into three integration policy regimes (inclusive, assimilationist, and exclusionist), according to the Migrant Integration Policy Index (MIPEX). The MIPEX comprises 38 indicators of the labor market, education, health, political participation, access to nationality, family reunion, permanent residence, and anti-discrimination policies. The study found that in all integration regimes, immigrants report significantly more depressive symptoms than non-immigrants. Besides, financial strain explained all the associations in inclusive countries, most of it in assimilationist countries, but only a small part in exclusionist countries. The authors concluded that inequalities are larger in countries with more restrictive policies and those integration policies in the host country shape immigrants' health.

In another study Malmusi (95), explored the relationship of country-level integration policy with immigrants' health status in Europe, using data from the 2011 European Union Survey on Income and Living Conditions in 14 countries. The countries were grouped according to the Migrant Integration Policy Index (MIPEX) into multicultural, exclusionist, and assimilationist countries. The results showed that compared with multicultural countries, immigrants report worse health in exclusionist and assimilationist countries. Health inequalities between immigrants and natives were also higher in exclusionist countries. They concluded that immigrants in 'exclusionist' countries experience poorer socioeconomic and health outcomes, and that future

studies should confirm whether and how integration policy models could make a difference on migrants' health.

Besides, Borrell et al. (96) analyzed the association between perceived group discrimination (PGD) and health among immigrants in Europe, including first and second generations of immigrants and using data from the 2012- European Social Survey. Besides PGD the authors included a structural indicator as an independent variable, the National Immigration Integration Policy Index (MIPEX), classifying countries into inclusive, assimilationist, exclusionist countries. Controlling variables were age, sex, citizenship, educational level, marital, and activity. The authors found associations between perceived group discrimination and health outcomes in first-generation immigrants. There were also associations between PGD and health outcomes only in first-generation immigrants. PGD was associated with poor self-perceived health in women; with depression in both men, and women; and limitation of activity also in both genders. In inclusive countries, perceived discrimination was associated with depression, among both men and women, and limitation of activity among women. In assimilationist countries, perceived discrimination was associated with all health outcomes except poor self-perceived health among men.

Levecque and Van Rossem (206), investigated whether migrants in Europe are at higher risk for depression compared to the native population and whether the association between migration and depression depends on different forms of migrant integration. Migrant integration was analyzed from the individual (low educational level, financial difficulties, being out of the labor market, ethnic minority status, and discrimination) to the national level (national migrant integration policy). They included first- and second-generation immigrants and from European and non-EU origin and aged ≥ 15 years. Control variables were are gender, age, partner relationship, social support, and welfare state regime. They used data from the European Social Survey 2006/2007. The authors found that natives and second-generation migrants do not differ significantly in their risk profile for depression. First-generation migrants showed higher levels of depression, with those from Non-EU origin to be the worst off. The higher risk for depression was attributable to experienced barriers to socioeconomic integration and processes of discrimination.

Van de Beek et al. (204) investigated the association between experiences of social exclusion and self-reported depressive symptoms and psychotic experiences among Moroccan-Dutch immigrants. The authors created sum scores for the social exclusion variables: **social defeat, perceived discrimination, and social support**, analyzing the association with health outcomes through linear regression, adjusting the models

by demographics (age, gender, migrant status, and education). The study found that perceived discrimination and social defeat were significantly associated with psychotic experiences and social defeat was related to depressive symptoms. Social support and higher education were associated with less depressive symptoms and psychotic experiences.

3.4.1.3. Studies that analyze the associations between two or more dimensions of Social Exclusion and health

Some studies analyzed factors related to the economic and social dimensions of social exclusion at once. Fernandez et al.(101), in a longitudinal study carried out in a deprived neighborhood of Barcelona, estimated the impact of having experienced a personal economic crisis such as being fired from job, and having economic hardships on health-related poor quality of life (poor physical and mental health), also analyzing the possible buffering effect of perceived social support. They found an interaction between social support and a personal economic crisis concerning mental health; those who had low levels of social support and had also experienced an economic crisis had the lowest levels of mental health. They concluded that social support constitutes a safety net that offers protection against the adverse effect of economic recessions.

Dreger et al. (208), investigated the association between psychosocial, sociodemographic and material determinants of positive mental health in Europe. The study included material factors such as household tenure, household problems, neighborhood problems, material deprivation, financial problems. Psychosocial factors were marital status, the presence of children, social support, social network, trust, political participation, religion, and social exclusion measured as feelings of lack of recognition, confusion in life, and inferiority. Sociodemographic factors included age, educational level, urbanization level, and citizenship. The study found that material, as well as psychosocial, and sociodemographic factors were independently associated with poor positive mental health. When studying all factors together, the highest probability for poor positive mental health was reported for social exclusion among the psychosocial factors. Among the material factors, material deprivation had the highest impact.

Schütte et al. (97), conducted one of the few studies analyzing associations between sociodemographic, psychosocial, material, occupational factors, and self-rated health among workers from 31 European countries, based on data from the European Quality of Life Survey (2007). The study found that when all four groups of

factors were studied together, various factors were associated with poor self-rated health such as age (>30 years), being a manual worker, living in urban area, non-EU origin, low trust level, social exclusion -measured as **feelings of pessimism/ inferiority, loneliness, uselessness, and lack of recognition or acceptance-**, material deprivation, high financial problems, high neighborhood problems, low access to medical services, low quality of public services, high psychological job demands, low job reward, high work-life imbalance and high dangerous/unhealthy working conditions). Almost no differences were found in these associations according to occupation and country.

Ahnquist et al. (103) analyzed simultaneously the economic and social using the SDOH and social capital approaches. They examined independent associations, and interactions, between lack of economic capital (measured by economic hardships including low household income, inability to meet expenses and lacking cash reserves), and social capital (social participation, interpersonal and political/institutional trust) on various health outcomes at the individual level. Their results show that both measures of low economic capital and low social capital were significantly associated with poor health status. Significant interactive effects measured with a synergy index were observed between economic hardships and all various types of social capital. Furthermore, when combined, they potentiate the risk of poor health.

Novoa et al. (106) analyzed the association between inadequate housing conditions and poor self-reported health and mental health of a sample of adults assisted by the charitable organization Caritas in Barcelona, Spain. They also compared the health outcomes of this population with those of the overall population of Barcelona. The housing conditions included four dimensions related to social exclusion a) affordability (e.g., the percentage of monthly household income spent on rent or mortgage, problems meeting monthly cost, has ever lived in a shack, shelter, car, or on the street); b) the emotional link with the dwelling (level of satisfaction with the dwelling); c) dwelling conditions (e.g., house type, housing-related material deprivation, overcrowding); and neighborhood and community conditions (evaluation of the neighborhood as a place to live, safety, noise). The adjusting variables were sociodemographic factors such as age, education, legal status, employment status, and social support. They found that individuals seeking Caritas's help and also facing severe housing problems had a much poorer health status than the general population, even when compared to those belonging to the most deprived social classes. However, in men overcrowding was associated with better mental health, and the authors

hypothesized that it might be due to a social safety network to fall back on in difficult times. Such social support could lead to improved mental health.

Urbano-Garrido(88) analyzed the factors driving socioeconomic inequalities in health in Spain by including housing deprivation and social support as health determinants. The author found that health inequality is mainly explained, besides age, by SDOH such as being low educated, being a female, being a foreigner, being economically inactive, reporting financial deprivation, reporting housing deprivation and having low social support (poor frequency of contacts with friends). The author concluded that the major role played in health inequality by variables taking part in social exclusion points to the need to focus on the most vulnerable groups.

Poortinga et al.(175) analyzed the role of bonding, bridging, and linking social capital in community resilience and health and using data from the Citizenship Survey of England between 2007 and 2009. They included the following independent variables: bonding social capital: neighborhood cohesion, trust, belonging and civic participation; bridging social capital: social cohesion, mutual respect; linking social capital: political participation, activism, efficacy, and political trust; other socioeconomic variables included were the gender, age, marital status, children in the household, paid employment, neighborhood deprivation. The authors found that the indicators for the different types of social capital are only weakly interrelated, suggesting that they capture different aspects of the social environment. In line with the expectations, most indicators of bonding, bridging, and linking social capital were significantly associated with neighborhood deprivation and self-reported health. In particular bonding and bridging social cohesion, civic participation, different socioeconomic relationships, and political efficacy and trust appeared important for community health after controlling for neighborhood deprivation.

Some studies have analyzed the association between social exclusion factors and health outcomes in the immigrant population. Rivera et al. (105), in a recent study that aimed to demonstrate empirically that the mental health of immigrants in Spain deteriorates the longer they are resident in the country, analyzed individual social support and economic factors such as employment status, type of work undertaken together. Results showed that immigrants who have been residing less than ten years in Spain appear to have better mental health compared to the national population. They found that individual perceived social support has a positive relationship with the mental health indicator, with better levels of mental health among those who are married and have a work contract in the host country.

Gostens and Malmusi et al. (67) analyzed health inequalities between immigrants born in the middle- or low-income countries and natives in Spain in 2006 and 2012 and in the context of the financial crisis, taking into account age, gender, year of arrival and social class, educational level, employment status, social support, and overcrowding. They found interactions among the social and economic indicators. For instance, in 2006 immigrant women presented worse mental health than Spanish women, but this association was attenuated when overcrowding was added to the logistic model and disappeared when social support was also introduced. Also, the probability of poor self-rated health in immigrant women compared to native women, was greater in 2012 than in 2006, with a significant interaction when overcrowding and social support were also introduced.

Rodriguez-Alvarez et al. (98), analyzed health inequalities between native and immigrant populations (from China, Latin America, the Maghreb, and Senegal) in the Basque Country, Spain. These mediating determinants included sociodemographic factors, low social support, perceived discrimination, and migratory status factors such as length of stay, permit of residence, Spanish comprehension. The authors found that immigrants had poorer perceived health than natives in the Basque Country, regardless of age. These differences could be explained by the lower educational level, worse employment status, lower social support, and perceived discrimination among immigrants, both in men and women.

Gil-González et al. (207), analyzed perceived racism and discrimination factors based on sex, social class, religion and sexual orientation, and based on other forms such as in job seeking, in the workplace, when accessing health care, in public places (including the street) and their effect on the health of the immigrant and Spanish populations, including also individual social support factors in the analyses, and using data from the Spanish Health Interview Survey (SHIS) (2006). They found that for all of the variables studied and a joint variable of racism and discrimination, the immigrant population shows a greater prevalence of perceived racism when compared with the native Spanish population. Also, for both the Spanish and immigrant populations, those who perceived more racism were young, separated, and those who had low levels of social support perceived more racism. Racism and other forms of discrimination were associated with poor mental health and injury, consumption of psychotropics.3.4.2. Studies that analyze the independent associations between each dimension of social exclusion and health outcomes in Europe

A total of 28 articles meeting all of the inclusion and exclusion criteria were included in this review to answer the second question. The studies identified used secondary

data: eighteen studies used data from Spain, four studies used data from Sweden, three studies used data from Germany, one used data from Portugal, an one study used data from Italy and one study used from the European Union Statistics on Income and Living Conditions. Regarding the design, twenty-five studies used a cross-sectional design, and two used a longitudinal design. Regarding population sixteen studies were focused on immigrant and native populations to study health inequalities, nine studies were focused on the immigrant population, and two were focused on the general population, although they included the country of origin as a control variable. Most of these studies have analyzed one of the variables as predictor including the other(s) as the control, adjusting or confounder variable(s).

The studies that examined the economic, social, and cultural factors are described below, and the main characteristics and findings are summarized in tables11 to 14 in Appendix A.

3.4.2.1. The Economic Dimension of Social Exclusion

3.4.2.1.1. Employment and Working Conditions

Employment and working conditions are key social determinants of health and contribute to health inequalities (209-211) through pathways such as social and material deprivation, imposing limitations on workers' personal life such as in their capacity to plan for their future (212). Evidence has shown that non-European origin is associated with a higher disadvantage in finding employment not only among first-generation but also among second-generation immigrants (213). Cross-sectional and longitudinal research in the immigrant population in Europe have linked unemployment with poor SRH and poor mental health, also showed that immigrants suffer more from unemployment than natives (63, 214-216). Conversely, poor health has been associated with high unemployment probability; although immigrants or descendants with poor health have not been particularly likely to be unemployed, suggesting not be a "double disadvantage" (213).

This review found that immigrants face an elevated risk for precarious employment and working conditions such as temporary jobs, long working hours, lower wages, lack of safety protection, self-exposure to occupational health risks (19, 21, 139, 217-220). Moreover, those with higher levels of employment precariousness were women (21, 134, 139, 217, 221), young (aged 16-24 years), manual workers, and undocumented immigrants (19). Regarding origin, immigrants from semi-peripheral countries (upper-middle, middle, and low-income economies) have been described to be employed in jobs with lower quality of work (30). When compared to natives, immigrants have

reported having higher exposure to physical demands (221), higher percentages of temporary, verbal or no contract (19, 221, 222), and sickness presenteeism (134).

Recent studies have found that perceived job insecurity, temporary employment (atypical, contingent, or nonstandard), and long working hours were associated with adverse health outcomes (210, 212, 223). Research on immigrant population and mainly from Spain have also shown the association between precarious employment conditions and poor physical and mental health (19, 134, 139, 217, 221, 222, 224), especially among settled immigrant women when they are compared to native women (95, 221). Robert et al. (63) in a study on changes in employment conditions among immigrant workers in Spain, found that those whose number of working hours increased, whose monthly income decreased, and those who remained within the low-income bracket had an increased risk for poor mental health. Besides, Font et al. in another study found that immigrants employed in manual occupations are more frequently subjected to jobs involving increased exposure to psychosocial factors such high quantitative and emotional demands, low possibilities for development, low levels of support from coworkers, were related to perceived worse mental health (224).

3.4.2.1.2. Housing Deprivation

Housing impacts health through mechanisms such as housing affordability, housing conditions, and neighborhood characteristics which are interrelated (106). However, their effects on socioeconomic health inequalities have been less studied (88, 106). Studies have shown the association between housing problems and poor SRH when analyzing it together with other economic and social factors (67, 88, 225), and with political participation (97).

3.4.2.2. The Social Dimension of Social Exclusion

3.4.2.2.1. Social support and social capital

There is a growing literature linking immigration, social capital, and health, though studies in this field mainly focus on the role of social networks and ties in the integration of immigrants (185). Studies have shown that immigrant status was directly associated with lack of social support (226); also that immigrants have a shorter network size and lower social support than natives (67, 185, 227-229).

High levels of social capital were associated with good mental health (105, 185), and good physical health among immigrants (88, 230). On the other hand, perceived loneliness was related to poor perceived mental and physical health (185). In spite, of the positive effects of social capital on health, there is still a lack of standardized and

internationally valid assessments of social capital to explore the contribution and associations with health especially in immigrants (195).

Besides, social capital contributes to health inequalities between immigrants and natives (195, 227, 228). Salinero-Fort et al. found that good self-reported health was associated with being men, being Spanish-born, and having considerable social support (227). A recent study by Jonhson et al. (195) analyzed the mediation of social capital on psychological distress, among natives and immigrants in Sweden. They have found that indicators of social capital mediated this association for all immigrant men (except non-refugees in Sweden for 3-9 years) and refugee women living in Sweden for ten years or more. While bonding social capital showed the greatest mediatory role among three social capital types (bonding, bridging and linking social capital), adding them together had the strongest explanatory effect.

Rodriguez Alvarez et al (228) found that differences in Health-Related Quality of Life (HRQoL) between Moroccans and the autochthonous population in the Basque Country were attenuated when variables of social support were included in the multivariate models Also, that low social support and dissatisfaction with social life increased the risk of low HRQoL scores and the presence of anxiety and depression symptoms.

3.4.2.3. The Cultural dimension of Social Exclusion

3.4.2.3.1. Discrimination

In Europe, during the last decade, there has been an increase of studies analyzing the association between discrimination and health in the immigrant population. The evidence shows a high prevalence of discrimination among immigrants (98, 207, 231), especially from low-income countries (232, 233). Discrimination is associated with poor self-rated health (96, 231-234), and mental health (96, 207, 232, 233). Moreover, discrimination is an important factor that contributes to health inequalities (28, 231, 235). Some studies have found that the association between discrimination and health varies according to the place of origin (28, 234).

A recent study by Rodriguez-Alvarez et al. (234) examined the effect of perceived discrimination on self-rated health among immigrant population in the Basque Country, Spain. Even though the low prevalence of perceived discrimination, the authors have found that immigrants perceiving discrimination were more likely to report poor self-rated health than those who did not report to be discriminated. This consistent association did not change after controlling by age, gender, educational attainment, and region of origin.

Besides, Borrell et al. (96) found associations between perceived group discrimination (PGD) and health outcomes in first-generation immigrants. PGD was associated with poor self-perceived health in women; with depression in both men, and women; and limitation of activity also in both genders.

Sevillano et al. (28), analyzed ethnicity and perceived discrimination as key variables accounting for differences in self-reported physical and mental health in the immigrant and native populations in the Basque Country, Spain. They took into account socioeconomic predictors such as income level, educational level, type of occupation, documented vs. not documented status, marital status, and length of residence. They found that perceived discrimination was the best predictor of physical and mental health among immigrants (controlling for sociodemographic variables). African men, Bolivian women, and women without legal status had the poorest self-rated mental health.

Gil-González et al. (207) in their study of the effects of perceived racism and other forms of discrimination on the health of immigrants in Spain, found that racism and other forms of discrimination were associated with poor mental health and consumption of psychotropics.

3.4.3.5. Social class , gender and health inequalities

Studies in immigrant population have shown that immigrants are exposed to lower socioeconomic status, occupation, and income, than natives (67, 134, 230, 236). The social gradient in poor health among this population has been confirmed among immigrants from poor areas (134, 237-239), among manual social classes, especially in women (134), and in men with secondary education aged 40–64 who had more than ten years of residence (240).

3.5. Discussion

The first aim of this literature review was to summarize the existing evidence on the relationship between multidimensional social exclusion and health among the general and the immigrant population in Europe. A total of 19 studies were identified, out of them, eight studies analyzed the multidimensionality of Social Exclusion and Integration; out of them, three studies were focused on the general population (82, 86, 203), five studies were focused on the immigrant population (95, 96, 204, 205). Besides, eleven studies analyzed two or more dimensions of social exclusion at once, out of them, four studies were focused on the immigrant population (67, 98, 105, 207), and eight studies focused on the general population (88, 97, 101, 103, 106, 175, 208),

although five of these studies included the country of origin of the individuals (88, 97, 103, 106, 208).

Two studies (82, 86) used the Social Determinants of Health Approach; both constructed and validated an index of Social Exclusion based on public health surveys in the Netherlands, using four-dimension indicators: material deprivation, limited social participation, inadequate access to social rights, and lack of normative integration. Another study used sum scores for three social exclusion indicators: social defeat, perceived discrimination, and social support. The study found that these indicators were significantly associated with psychotic experiences and depressive symptoms among Moroccan-Dutch immigrants (204).

Four studies analyzed the relation between the national immigrant integration policy and health inequalities between immigrant and native populations (95, 205, 206), and health outcomes among the immigrant population (96). These studies classified countries based on the Migrant Integration Policy Index (MIPEX), in multicultural or inclusionist, assimilationist, and exclusionist countries. It was found that the country-level Integration Policy is associated with poorer health outcomes in immigrants residing in 'exclusionist' countries in Europe (95, 205). Besides, associations between Perceived Group Discrimination and poor health outcomes in first-generation immigrants from low-income countries are more important in assimilationist countries in Europe (96). Also, a country's national policy on migrant integration seems not to soften the depressing effect of being a first generation migrant nor does it have indirect beneficial health effects by reducing barriers to integration (206).

Also, Van de Beek et al. (203) created a sum score for social exclusion based on social defeat, perceived discrimination, and social support variables. The study found that perceived discrimination and social defeat were significantly associated with psychotic experiences and social defeat was related to depressive symptoms. Social support and higher education were associated with less depressive symptoms and psychotic experiences among Moroccan-Dutch immigrants.

In addition, eleven studies analyzed two or more dimensions of social exclusion at once. Four studies focused on the immigrant population (67, 98, 105, 207), and eight studies focused on the general population (88, 97, 101, 103, 106, 175, 208), although five of these studies included the country of origin of the individuals (88, 97, 103, 106, 208). Most of these studies have analyzed one of the variables as predictor including the other(s) as the control, adjusting or confounder variable(s). These studies found interactions between the social and economic dimensions in their association with poor

self-rated health (97, 98, 103, 106, 175), and with poor mental health (88, 101, 106, 204, 208).

This review found that social exclusion factors explain health inequalities between natives and immigrants. Social factors such as labor status, housing problems, financial deprivation, and social support explained health inequality in self-assessed health (67, 88) , and mental health (105, 106). The length of residence in the host country was also associated with poor health outcomes (67, 105) .

The second aim of this Scoping Review was to summarize the evidence in Europe about each of the social exclusion dimensions and their independent associations with health outcomes in the immigrant population. Regarding the economic dimension, this review found that unemployment is related to poor self-rated health and poor mental health (63, 214-216). Precarious employment conditions were associated to poor physical and mental health (19, 63, 134, 139, 211, 217, 221-224), especially among settled immigrant women when they are compared to native women (95, 221). Factors such as long working hours and low monthly income (63), psychosocial factors(224) were associated with poor mental health.

Regarding the social dimension, high levels of social capital were associated with good mental health (105, 185, 230) and good physical health among immigrants(88, 230). Perceived loneliness was related to poor perceived mental and physical health (185). Besides, social capital contributes to health inequalities between immigrants and natives(195, 227, 228). Concerning the cultural dimension, discrimination is associated with poor self-rated health (96, 231-234), and mental health(96, 207, 232, 233). Some studies have found that the association between discrimination and health varies according to the place of origin (28, 234). Moreover, discrimination is also an important factor that contributes to health inequalities (28, 231, 235).

3.6. Conclusions and knowledge gap

As seen from this review, only eight studies analyzed social exclusion as a multidimensional construct, out of them, five focused on the immigrant population in Europe. Two studies used the Social Determinants of Health approach and demonstrated that a social exclusion index could be constructed and validated based on National Health Surveys. Three studies found that country-level Integration Policy is associated with poorer health outcomes in immigrants residing in 'exclusionist' countries (95, 96, 205). Besides, eleven studies analyzed two or more dimensions of social exclusion at once, among the general and immigrant population. Interactions were found between the social and economic dimensions in their association with poor

self-rated health (97, 98, 103, 106, 175) and with poor mental health (88, 101, 106, 204, 208). Social exclusion factors explained health inequalities between natives and immigrants regarding self-reported health(67, 88) and mental health (105, 106). The length of residence in the host country was also associated with poor health outcomes (67, 105).

Regarding the independent associations between each social exclusion dimension and health among the immigrant population in Europe, economic factors such as unemployment (63, 214-216), precarious employment conditions (19, 63, 134, 139, 211, 217, 221-224), were related to poor self-rated health and poor mental health, especially among settled immigrant women when they are compared to native women (95, 221). Regarding the social dimension, high levels of social capital were associated with good mental health (105, 185, 230) and good physical health among immigrants(88, 230). Besides, social capital contributes to health inequalities between immigrants and natives (195, 227, 228). Concerning the cultural dimension, discrimination was associated with poor self-rated health(96, 231-234), and mental health(96, 207, 232, 233), also contributing to health inequalities (28, 231, 235).

Therefore, the knowledge gaps identified are: a) there is little empirical research on the relationship between social exclusion as a multidimensional construct and health in the general population and the immigrant population; b) there is also a scarcity of studies which analyzed several social exclusion factors simultaneously, especially from the Social Determinants of Health approach; b) most of the studies analyzed interactions between the economic dimension (income, employment status, working conditions) and the social dimension (social support). Thus, cultural and political dimensions remain less studied; c) key immigrant integration indicators such as housing conditions, discrimination, social interpersonal and institutional trust, citizenship/ naturalization, political participation, and unmet health care needs have been less analyzed; d) very few studies analyzed structural determinants; e) Very few studies analyzed social capital indicators such as the interpersonal and institutional trust, as well as political participation. Few studies analyzed the cultural dimension; f) further research would be needed to analyze the associations between multidimensional social exclusion and health outcomes, including indicators that capture the multidimensionality of the social exclusion concept; f) exploring the joint effect of the economic, social, cultural and political factors on health would also be needed. g) there is also the need for studies segregating the analysis by sex, age or length of residence in the host country.

Chapter 4: The multidimensional analysis of social exclusion and its association with immigrants' health and health inequalities in Europe.

4.1 Introduction to the thesis studies

Currently, there are over 258 million international migrants in the world (241), and about one third live in the European Union (EU) (3). Out of them, 35 million people were born outside of the EU-28 (242). While plans to improve immigrant integration and to improve the health of immigrants do exist in Europe (43, 112, 121-124), immigrants still face many problems with having their human rights respected; fulfilling basic needs, and with social integration (5, 20, 125-127).

Immigrants' lives are shaped by the Social Determinants of Migrant's Health (SDOMH) along with the migratory phases: in their homelands, during the migration journey, in destination countries, and the return (75, 80, 243). The SDOH are the social, economic and environmental conditions in which people are born, grow, live, work and age that influence the health of individuals and populations (42, 87). Immigrants are more vulnerable to social exclusion (SE) as they suffer from certain types of discrimination, higher levels of unemployment, precarious jobs, deepening levels of poverty, differential access to housing, neighborhood segregation, limitations in the access to public services, limited political and social participation; being all of these factors SDOMH themselves (20, 243).

The WHO Commission on Social Determinants of Health (CSHD) defines SE as ''dynamic multidimensional processes driven by unequal power relationships interacting across four main dimensions – economic, political, social and cultural - and at different levels including individual, household, group, community, country and global''(85). SE is considered a significant factor in the causation and maintenance of health inequalities (86-89). Not only factors such as material deprivation, poor housing, few social contacts, and discrimination have negative impacts on health; but also the experience of being excluded might lead to poor health through psychosocial stress mechanisms (82, 87, 90). Besides, the cumulative nature of SE is linked to the life-course model as each linkage between the SE dimensions deepens a person's negative experience, and the depth of SE is reinforced through the life cycle with adverse effects on health (86, 92). In the case of immigrants, the life-course approach shows the different cumulative factors along with the migratory phases (1, 77, 80, 134, 136, 139-142).

There is much disagreement amongst authors on the measurement of social exclusion (83), although there are agreements about its multidimensionality

encompassing the social, political, cultural and economic dimensions which operate at various social levels (154, 166), and its dynamic and relational characteristics (87, 93, 144, 147).

The WHO – CSDH framework (85, 87) proposes four dimensions: the economic dimension is constituted by unequal access to material resources (e.g. income, employment, housing, and working conditions). The social dimension is constituted by individual social capital. The political dimension is constituted by unequal access to services and opportunities to participate in public life, to express desires and interests, and political participation. Finally, the cultural dimension is constituted by the extent to which distinct values, norms and ways of living are accepted and respected. At one extreme along this dimension diversity is accepted, and at the other, there are situations of stigma and discrimination.

Dimensions and indicators for analyzing the Social Inclusion and/or integration of immigrants within host societies (34, 93, 124) have been proposed. Thus, given the complexity of the concept, there are not a single set of indicators to measure social exclusion. However, in this thesis the use of the social exclusion indicators were based on a scoping literature review. First, key documents and reports on the measurement of Social Exclusion and Inclusion (34, 83, 87, 93, 124, 144, 147, 163, 166, 168) were reviewed to identify social exclusion indicators. Second, two scoping reviews were also conducted to identify SE indicators and the associations with health outcomes and health inequalities in Europe (see Chapter 3).

As it has been seen very often before in the theoretical framework, exclusion processes in one dimension affect those in other dimensions (87, 93, 167). Also, social exclusion is not the converse of social inclusion; both are dynamic processes that can exist together (150). Hence, there are very few people who are excluded in all dimensions at once (153, 167). Indeed, there are many more people who are socially excluded only in some respects, and it is virtually impossible for human beings to exist totally outside societal influences. Besides, the interaction between multiple exclusionary processes makes the links between social exclusion factors and the SDOH explicit (82, 85-87)

The studies measuring multidimensional social exclusion in association with health in Europe are scarce. However, some studies reveal that social exclusion and integration could be measured by analyzing different social exclusion factors at once among the immigrant (204, 206) and general populations (82, 86, 203). Besides, few studies analyzed various factors and SDOH -related to social exclusion

dimensions- at once among the general (88, 97, 101, 103, 106, 175, 208) and immigrant populations (67, 95, 96, 98, 105, 205, 207).

It is known, based on evidence from Europe, that factors such as socioeconomic integration (67), not having a work contract (105), precarious working conditions (19, 63, 217, 221, 244), financial difficulties (205, 214), unemployment (63, 215, 216), poor housing conditions (106) discrimination (28, 96, 207, 231, 234), low social support (105, 185, 195, 204, 228, 230), low level of sense of belonging (245), are associated with immigrants' poor mental health (63, 96, 105, 204), and poor self-rated health (19, 244). These factors are also related with health inequalities in poor mental health (185, 195, 205, 206, 217, 221, 228), in poor self-rated health (98, 185, 214, 217, 221, 227, 234), and poor well-being (28, 215, 231). In addition, previous studies have shown that mental health becomes worse in immigrants than in their native counterparts considering their length of residence in Europe (67, 105, 195, 227). Additionally, interactions between the economic, cultural and social factors in association with poor mental health (204, 223, 245), and mental health inequalities (206, 207) between immigrants and natives have also been found.

It is important to mention that the financial crisis in 2008 has been affecting the SDOMH. For instance, immigrants experienced the most significant increase in unemployment between 2008 and 2015 (+ 6.6 percentage points) (23), and 40.2 % of the non-EU immigrants in the EU were at risk of poverty or social exclusion in 2015 (31) compared to the 35% in 2008 (49). Also, the financial crisis was identified as a significant risk factor for poor mental health in immigrants, especially for those who were undocumented and who lacked social security (62, 63, 67, 246).

Based on what was previously explained, we can infer that immigration and SDOH are two related areas of public health. However, as some researchers argue there is still not sufficient dialogue with each other, losing opportunities for research, practice, and policy work (68, 75, 76). Even though migration is an emerging and increasing social, political and public health issue (2, 20, 75, 94), very few studies applied the lens of social determinants of health to understand immigrants' experiences in Europe. Also, the empirical research on multidimensional social exclusion factors and their poor health-related outcomes is still scarce (82, 86). Hence, the indicators chosen for the following studies were selected to measure multidimensional social exclusion and each one of its dimensions, in order to analyze the association with health and each one of these dimensions; but also the independent and the overall associations with health, and their contribution to health inequalities.

In this context, the next chapters present three studies conducted for this thesis. The first study aims to analyze inequalities in depressive symptoms between native and immigrant groups according to their length of residence in Europe and to test the mediating role of social exclusion in explaining these differences (Chapter 5). The second study aims to examine the association between independent and overall dimensions of social exclusion and self-reported depressive symptoms, stratified by sex, in the immigrant population in Europe (Chapter 6). The third study aims to examine the association between independent and overall dimensions of social exclusion and self-reported health in the immigrant population in Europe (Chapter 7). Finally, the studies conclusions and policy implications are presented in Chapter 8.

Chapter 5: Inequalities in depressive symptoms between natives and immigrants in Europe: The mediating role of social exclusion.

5.1. Objective

To analyze inequalities in depressive symptoms between native and immigrant groups according to their length of residence in Europe, and to test the mediating role of social exclusion in explaining these differences.

5.2. Methods

5.2.1. Design and information source

A cross-sectional study was performed using data from the seventh round of the European Social Survey (ESS), carried out in 2014. The seventh round microdata was selected for this study because of its rotating module dedicated to the social determinants of health. The ESS is a cross-national survey that has been conducted across Europe every two years since 2001 (247). The 7th round used representative cross-sectional samples of all persons aged 15 and over regardless of their nationality, citizenship or language - who reside in private households in European countries (248). Individuals were selected by strict random probability methods at every stage with sampling frames and addresses, households, and individuals used. Substitution of non-responding households or individuals (whether 'refusals,' 'non-contacts' or 'ineligibles') is not permitted at any stage (248). Data is gathered by face-to-face interviews conducted in the home of the participant. Response rates target 70%, real target lower in some countries (249).

5.2.2. Study population

The study included a total sample of 24,349 residents in 20 European countries: Belgium, Spain, Finland, UK, Netherlands, Norway, Portugal, Sweden, Switzerland, Germany, France, Ireland, Denmark, Estonia, Lithuania, Slovenia, Austria, Czech Republic, Hungary, and Polonia. Residents born in the country were N= 22557, and foreign-born residents were N= 1792. Foreign-born residents born in high-income countries according to the World Bank classification (250) were excluded. The sample was limited to working-age residents (18–65 years). This age group was selected considering the following aspects: a) health outcomes might be highly influenced by aging; b) to avoid the mortality bias among the elderly; c) a common strategy used by researchers for avoiding age influence on health outcomes is to constrain the age group to the economically active population (67, 138), as it was used in previous studies regarding health inequalities between natives and immigrants (28, 67, 98, 214); and d) there was a small percentage of elderly immigrants (>65 years).

5.2.3. Outcome variable: Depressive symptoms

Depressive symptomatology was measured through the short version of the Centre for Epidemiological Studies Depression Scale (CES-D8). Questions evaluated how often during the past week respondents felt depressed; everything they did as an effort; their sleep was restless; felt unhappy; felt lonely; did not enjoy life, felt sad; and could not get going out. All questions included four response categories (0 = never or almost never to 3 = all or almost all of the time). Items were summed up to give a total score that ranged from 0 (the lowest level) to 24 (the highest level), a cut-off point of over eight was established for depression, as in a previous study (96).

5.2.4. Exposure variable: Immigrant Status

Immigrant status was determined by the "country of birth," which avoids the bias originated from using "nationality" which can be acquired through marriage (30, 233). Individuals were considered to be immigrants if they were born abroad. Those born in the country of origin were considered to be natives. Immigrants were further stratified considering the length of residence in Europe 1-10 years; 11-20; and >20 years similar to previous studies (105, 195). The length of residence information was assessed through the question "What year did you first come to live in this country?; therefore, is based on the date of entry into the country.

5.2.5. Measures of Social Exclusion: potential mediators

This study used the WHO definition of social exclusion (SE), by which SE consists in dynamic, multidimensional processes driven by unequal power relationships, that operate along and interact across the cultural, economic, political and social dimensions (85). The interaction between multiple exclusionary processes makes the links between social exclusion factors and the SDOH explicit (82, 85-87). Also, social exclusion is not the converse of social inclusion, and both are dynamic processes that can exist together (150); existing very few people excluded in all dimensions at once (153, 167). Thus, excluded individuals are those who are less advantaged in each SE factor. In addition, the indicators were grouped into four dimensions –the economic, social, cultural, and political- to analyze their independent and overall contribution to depressive symptom inequalities. Social exclusion factors in each dimension are described below. It is also important to note that although the levels of sense of belonging and political participation were considered as cultural and political integration factors, respectively; both belong to more than one dimension. For instance, both encompass dimensions of citizenship (206, 251), and social capital (183, 252).

5.2.5.1. Potential mediators: the economic dimension of social exclusion

5.2.5.1.1. Financial difficulties when growing up

This indicator of immigrants' early life deprivation was measured through the question "How often did you and your family experienced severe financial difficulties when you were growing up?". The response categories were "always, often, sometimes, hardly ever, never," the variable was recoded into 1= yes (always/often/sometimes) and 0= no (hardly ever/never).

5.2.5.1.2. Feeling about household income nowadays

This indicator was obtained through the question "Which of the descriptions on this card comes closest to how you feel about your household income nowadays?. The response categories were "living comfortably on present income; coping on present income; finding it difficult on present income; finding it very difficult on present income". It was recoded into 0= living comfortably/coping, and 1= finding it difficult/very difficult.

5.2.5.1.3. Activity

It was measured asking about the respondent's principal activity the week before filling out the questionnaire. The response categories (paid work, studying, unemployed, retired or disabled, housework, others) were recoded into a dummy variable: 0=employed, 1=unemployed, and 2= economically inactive, according to the OCDE definition (253) and including those individuals who answered to be studying , to be retired, and engaged in housework activity).

5.2.5.1.4. Housing problems

Housing problems were assessed through the question: "Do any of these problems apply to your accommodation?". The options were mould or rot in windows, doors or floors, damp walls or leaking roof, lack of indoor flushing toilet, lack of bath and shower, overcrowding, and extremely hot or extremely cold (yes/no). The presence of one or more problems was considered the presence of housing problems. The variable was dichotomized in 0=absence and 1= presence.

5.2.5.2. Potential mediators: the social dimension of social exclusion

5.2.5.2.1. Informal social contacts (bonding social capital and strong ties)

It was assessed through the question "how often do you socially meet with friends, relatives or colleagues?. The response options were: never, less than once a month, once a month, several times a month, once a week, several times a week, and every day. The variable was recoded into a dummy variable 0= good social contacts

(weekly/daily) and 1= poor social contacts (monthly or less) as in previous studies (254).

5.2.5.2.2.. Thick trust (trust embedded in personal relations)

Trust in people was measured through three questions: “Would you say that most people can be trusted?”, “Do you think that most people would try to take advantage of you?, and “Would you say that most of the time people try to be helpful?”. answers originally ranged on a score from 0 to 10 (where 0 means you can't be too careful and 10 means that most people can be trusted). A mean for these questions was computed and converted into a 10-point Likert scale variable. Finally, it was dichotomized into a dummy variable: 1= low (0 to 5 points) and 0= high (6 to 10 points), as in previous studies (103, 255).

5.2.5.2.3. Thin trust (trust in institutions)

It was measured by asking participants about how much people trust in the country’s parliament, in the legal system, in the Police, in the politicians, and in the political parties. The original answers on each specific question range from 0 to 10 (0 implied “no trust at all”, and 10 implied “complete trust”). The responses for each of these five questions were added to an index that ranges from 0–50. The original 50 alternatives were dichotomized into 1= low level of trust (0–30) and 0= high level of (31–50), as in a previous study (254).

5.2.5.3. Potential mediators: The Cultural Dimension of Social Exclusion

5.2.5.3.1. Sense of belonging to the host country

The sense of belonging was measured asking respondents “How close do you feel to the country. Answer options were 1 = very close; 2 = close; 3 = not very close; and 4 = not close at all. The original responses were dichotomized into a new variable called “feeling a sense of belonging” where 0 = high and 1= low, as in previous study (256).

5.2.5.4. Potential mediators: The Political Dimension of Social Exclusion

5.2.5.4.1. Political participation

It was assessed by asking participants whether they had contacted a politician or government official, signed a petition, taking part in a lawful public demonstration in the last 12 months (Yes/No). A sum for these three variables was computed, and the variable was dichotomized in Yes= 1 (at least one activity) and No= 0 (None).

5.2.5.5.. Covariates

5.2.5.5.1. Sex

It was coded in 0= men and 1 = women.

5.2.5.5.2. Age

Age was calculated based on the respondents' year of birth. The original continuous variable was recoded into three groups: 18–33 years, 34–49 years, and 50–65 years. These age groups correspond to the economically active periods (30).

5.2.5.5.3. Educational level

The original variable was grouped according to the International Standard Classification of Education (ISCED-97) in primary or less, lower secondary, upper secondary and tertiary. Then, it was recoded into 0= less than secondary (low), secondary (middle), and tertiary (high).

5.2.5.5.4.. Living with a partner

This indicator was assessed through the item "respondent lives with husband/wife/partner" (does/does not), and it was recoded into a dummy variable 0 = living with a partner and 1= does not live with a partner.

5.2.6. Statistical Analysis

A descriptive analysis was conducted by calculating absolute and relative frequencies for the categorical variables, and measures of central tendency (mean, standard deviation) for continuous variables. Differences between immigrant groups and natives were analyzed using the Chi-square test (Table1). Variables with a $p \leq 0,05$ were considered statiscally significant.

The mediation analysis followed the three steps of regression models proposed by Baron and Kenny (257) for testing the mediating role of a variable (fig.10). First, the effect of immigrant status (X) on depression (Y) was tested (*path c*); second, the effects of immigrant status (X) on social exclusion dimensions (M1 – M4) were tested (*paths a1-a4*); steps third and four were estimated in the same regression analysis; thus the effect of immigrant status (X) on depression (Y) controlling social exclusion dimensions (M1- M4) was computed (*path c'*) (258, 259). This last step was used to determine the partial or complete attenuation of the association between immigrant status (X) and depression (Y). For all steps, Robust Poisson regression models were fitted to obtain prevalence ratios (PR) with confidence intervals CI 95% (260-262). For step one, the immigrant status variable was added in Model 0. For steps third and

fourth, sex, age, education level, and living with a partner were added in Model I. Then, each set of social exclusion factors were introduced separately in blocks in models II to V, and Model VI was adjusted for all social exclusion factors. For the second step, the effects of immigrant status on each social exclusion factors were calculated by several regression models adjusted by covariates.

Multicollinearity among potential mediators and covariates was tested using Pearson's correlation test before the multivariate analyses (< 0,6). All analyses were performed using weighted data as it is recommended by the European Social Survey Organization (263). A combination of two weights was used. First, the post-stratification weights which use auxiliary information to reduce the sampling error and potential non-response bias. They are obtained by adjusting the design weights (which account for differences in inclusion probabilities and corrects for bias in the sampling design) in such a way that they will replicate the distribution of the cross-classification of age-group, gender, and education in the population and the marginal distribution for the region in the population. Second, the population size weights which correct for the fact that most countries that took part in the ESS have different population sizes but similar sample sizes (263). All analyses were performed using IBM SPSS Statistics for Windows version 24.0.

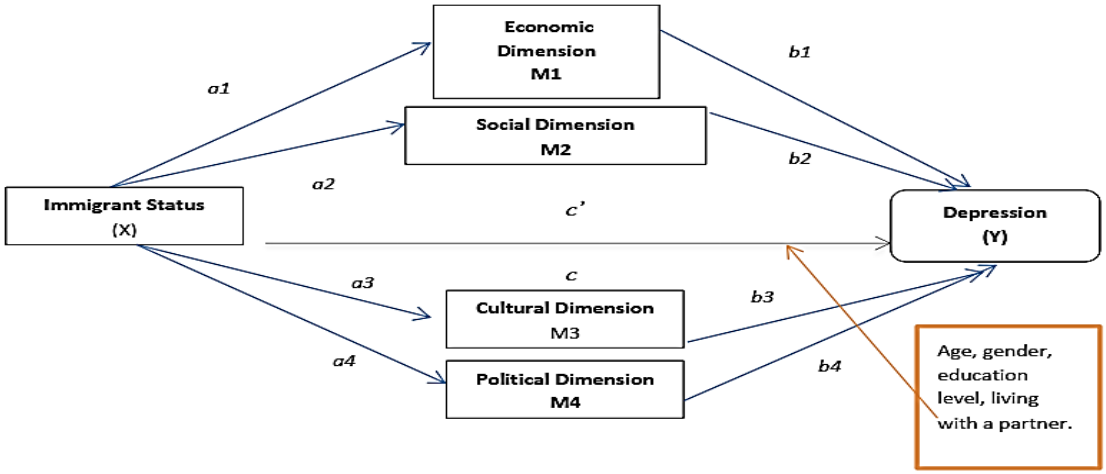

Figure 7. Mediation model of Social Exclusion factors on depressive symptoms

5.2.7. Ethical approval

This study uses secondary anonymized data. The datasets do not contain direct identifiers and were collected according to ethical standards. The European Social Survey (seventh round) dataset is freely and publicly available online for research (264). Thus, there is no specific ethical approval required for the present study.

5.3. Results

A total of 24,374 individuals were included in the study, 7,5% of them were immigrants, and about 40% of them have resided 20 or more years in Europe. **Table 2** shows the descriptive statistics according to the immigrant status and the length of residence. Immigrants had higher prevalence of depressive symptoms than natives; those residing in Europe for 1-10 years and ≥20 years had the highest prevalence of deppessive symptoms. Immigrants had higher proportions of low education than natives; however, those in Europe for 1-10 years had higher frequencies of tertiary education. Immigrants showed higher percentages in all social exclusion factors than their native counterparts, with differences by the length of residence. For instance, immigrants in Europe for 1-10 years had higher frequencies in economic exclusion factors, low political participation, and low sense of belonging to the host country than natives; also, immigrants residing in Europe for ≥20 years, showed higher frequencies of financial difficulties while growing up, low institutional trust, and low interpersonal trust. Gender, and poor social contacts were not significantly associated with immigrant status.

Excluded individuals showed higher prevalence of depressive symptoms than non-excluded individuals; except for immigrants with high political participation residing in Europe for 1-10 years, who had higher prevalence of depressive symptoms than individuals with low polical participation. Besides, women, less educated individuals, and individuals aged 18 to 33 years had the highest prevalence of depressive symptoms. Among immigrants, those living with a partner had a higher prevalence of depressive symptoms. All p values comparing immigrant status groups in all social exclusion factors were significant with strong associations ≤0,001 (table 15 in Annex B).

Table 3 shows results for steps one, three and four of the mediation procedure. The first step tested the association between immigrant status and depressive symptoms and is shown in Models 0 and I. In model 0 (unadjusted) immigrants in Europe for 1-10 years and ≥20 years were more likely to have depressive symptoms than natives (PR:1.36; 95%CI: 1,20-1,53 for 1-10 years and PR: 1,44; 95%CI: 1,30-1,60 for >20 years). This association was non-significant for immigrants in Europe for 11 to 20 years. Adjusting for sociodemographics (Model I) these associations persisted and slightly decreased for both immigrant groups (PR: 1,27; 95%CI:1,12-1,44 for 1-10 years and PR: 1,36; 95%CI: 1,23-1,51 for >20 years). Therefore; immigrants residing in Europe for 1-10 years and ≥20 years were eligible for mediation. Models II, III, IV, and V were adjusted for sociodemographics, and economic, social, cultural, and political

social exclusion factors, respectively. In Models II and VI the associations with depressive symptoms became statistically non-significant for immigrants in Europe for 1-10 years and were attenuated for immigrants in Europe ≥20 years. In Models III, IV, and V -adjusted for sociodemographics and social capital factors, cultural, and political factors, respectively- the association remained significant with a very slight attenuation for both immigrant groups.

Table 4 shows the results for the second step of mediation analysis, the association between immigrant status and social exclusion factors. After adjustment for sociodemographics, all the associations between immigrant status and social exclusion variables were statistically significant for eligible groups; except for immigrants in Europe for 1-10 years with household income insatisfaction, low sense of belonging and poor interpersonal trust; and for immigrants for ≥20 years with poor social contacts and poor political participation.

5.4. Discussion

This study investigated inequalities in depressive symptoms between natives and immigrant groups according to their length of residence in Europe and examined if social exclusion could explain these differences. The results show that immigrants experience higher levels of depressive symptoms than natives which variate according to the length of residence in Europe, increasing for immigrants residing for 1-10 years and immigrants residing for ≥20 years. Also, the findings show that different dimensions of social exclusion -economic, social, and cultural- together explain thoroughly these differences between natives and immigrants residing for 1-10 years, and very slightly for immigrants residing for ≥20 years. Besides, the economic factors in isolation explain these differences between natives and immigrants residing for 1-10 years in Europe.

All immigrant groups showed higher prevalences of depressive symptoms than natives. Immigrants residing in Europe for 1-10 years and ≥20 years had the highest prevalences. Besides, the regression analysis showed that both these groups of immigrants were more likely to have depressive symptoms than natives. The mental health deterioration in immigrants residing in Europe for ≥20 years, could be explained by the cumulative exposure to socioeconomic disadvantage, separation from relatives and friends, poor integration, cultural differences and discrimination, which accumulate throughout the migration trajectory and the life course affecting immigrants' health negatively (134, 136, 142, 265). Besides, failure to achieve the socio-economic

expectations and perceived downward social mobility might correlate with poor health among immigrants and contribute to inequalities (265, 266).

Contrary to the results of this study, other research showed that recent immigrants residing for <10 years had better mental health than natives in Europe (67, 105), and elsewhere (267-269). An explanation for the high prevalence of depressive symptoms in recent immigrants (1-10 years), could be their arrival at the onset of the financial crisis in Europe in 2008. The impact of the financial crisis on the social determinants of health and social inequalities in health has been described (38-40), with the most significant effect seen among vulnerable populations such as youth, immigrants and ethnic minorities (20, 38-40). These groups are more likely to suffer exclusionary processes which might widen pre-existing health inequalities, leading to worse health (39, 40). Also, evidence shows that financial crisis had an impact on mental health (60) and increased social inequalities in health, being identified as a major risk factor for poor mental health in immigrants, especially for those who are undocumented and who lacked social security (62, 63, 67, 246).

Thus, the previous explanations might reflect that migration is not a risk per se, but depends on the context in which the migration occurs. Also, where and in what circumstances people migrate (e.g., asylum seekers or refugees) could affect their mental health. For instance, a recent study conducted in Sweden by Johnson et al. (195) found that recent male immigrants - both refugees and non-refugees- showed higher prevalence of depressive symptoms among immigrants and in all groups according to the length of residence (1-10 years; 11-19, and ≥20 years). Also, male immigrants and refugee women with more than 20 years of residence in Sweden had a significantly higher risk of psychological distress than natives when controlling this association for sociodemographics (occupational class, disposable family income, education, type of employment, and family constellation) and social support variables .

Immigrants showed higher frequencies in all social exclusion factors than their native counterparts. This is consistent with previous research that shows that immigrants have higher unemployment rates (63, 213-216, 219), are more exposed to living in substandard housing (20, 106, 270), and to report higher levels of economic stress in childhood (271, 272) than natives. In addition, immigrants have a shorter network size and lower social support than natives (67, 185, 226-229); also, social capital increases with longer duration of residence (195). Besides, immigrants and refugees were also found to have lower levels of trust in public institutions, and interpersonal trust than natives (195).

In the mediation regression analysis, immigrants residing in Europe for 1-10 years and ≥20 years were eligible for mediation because of their significant associations (PR:1.36; 95%CI: 1,20-1,53 for 1-10 years and PR: 1,44; 95%CI: 1,30-1,60 for >20 years). Where controlling for economic factors accounted completely for health inequalities in depressive symptoms for immigrants in Europe for 1-10 years, and partially for health inequalities for immigrants in Europe for ≥20 years. Previous studies found that unemployment and financial difficulties accounted for health inequalities in poor mental health between natives and immigrants (205, 273). Besides, previous research shows existing health inequalities between individuals with poor housing conditions -among them immigrants- and the general population in Catalonia, Spain (106, 225). A previous study showed that economic factors explained completely the health inequalities in depressive symptoms for male and female non-refugee immigrants residing for 1 to 9 years in Sweden (195).

After controlling for social capital factors, the associations remained significant though they were very slightly attenuated. Thus, this may signify that immigrants have higher social capital than natives, as shown in step 2 of mediation analysis, immigrants in both groups are less likely to have poor social contacts, low institutional trust, and almost the same likelihood to have low interpersonal trust than natives. These results are contrary to the findings of a previous study conducted in Sweden in which social capital factors together explained health inequalities for various groups of immigrants -nonrefugees and refugees- according to the length of residence (195). Also, another research found that social capital might explain mental health inequalities between natives and immigrants (177, 255).

When controlling for the level of sense of belonging (Model IV), and the level of political participation (Model V), the associations remained significant with a very slight attenuation in values. Previous studies found that low sense of belonging is a risk factor for suicidal ideation among immigrants in Spain (245); high sense of belonging is associated with positive mental health among immigrants in Canada (251). The slight mediation effect that these factors have in isolation may be explained considering that only immigrants residing for 1- 10 years were more likely to report low levels of sense of belonging and political participation; immigrants residing for ≥20 years had higher levels than natives (step 2 of mediation).

When controlling for all social exclusion factors, these completely explained health inequalities in depressive symptoms for immigrants residing in Europe for 1-10 years and partially for immigrants residing in Europe for ≥20 years. Previous research analyzed two or more dimensions of social exclusion at the same time, finding their

contribution to health inequalities between immigrants and natives (67, 195, 206). Gostens and Malmusi et al. (67) analyzed health inequalities between immigrants born in the middle or low-income countries and natives before and after the financial crisis in Spain. They found that social support and employment status contribute to inequalities in poor mental health. Levecque and Van Rossem (206), found that first-generation migrants show higher levels of depression, with those born outside of Europe to be the worst off. This higher risk for depression was mainly due to experienced barriers to socioeconomic integration and discrimination and was not attributable to ethnic minority status. Johnson et al. (195), found that social capital explained inequalities in depressive symptoms between immigrants – refugees and nonrefugees residing in Sweden for 1-10; 11-19; and ≥20 years- and natives, together with socioeconomic factors such as occupational class, disposable family income, education, type of employment, and family constellation; except for non-refugees living in Sweden for 3-9 years) and for refugee women livimg in Sweden for 10 years or more.

5.5. Limitations and strenghts

This study addresses a knowledges gap on the analysis of social exclusion through multidimensional indicators and from the Social Determinants of Health Approach, as well as its mediating role on immigrant' depressive sympthoms. Another contribution of this study is the classification of immigrant groups according to their length of residence in Europe. However, it has several limitations. The largest limitations is the small sample size of immigrants compared to natives; however the data in each group was adequate for conducting the analysis (274). These condition prevented the mediation analysis of social exclusion factors in explaining health inequalities segregating the data by sex, into wider ranges of length of residence, and by country. It was also not possible to study second generation immigrants either; however, previous studies have not found differences in social exclusion factors and health outcomes between second-generation immigrants and natives (96, 206).

As a second limitation of the study, its cross-sectional design does not allow to make causal inferences about the associations between social exclusion factors and depressive symptoms; but rather it allows to conceptually model and statistically evaluate the potential mediators in this association. Finally, this study uses a self-report depression inventory for which there have been valid cut-off points established (96) but does not allow us to assess clinical depression (206). However, the use of dimensional models is more reliable and sensitive to the nature and the degree of symptoms, and it is more suitable for regression analyses (206). Besides, this study used a widely validated scale for depression (96, 206). More studies are needed to study social

exclusion segregating the analysis by sex and differentianting specific groups of immigrants such as refugees from non refugees, or by country of origin. Besides, as depression has lifelong determinants, data on the socioeconomic and living conditions gathered before migration and during the migration process are needed for a more detailed analysis; especially to identify other factors that might explain inequalities in depressive symptoms among immigrants residing for 20 or more years.

Table 2. Distribution of sociodemographic characteristics, social exclusion and depressive symptoms according to immigrant status, seventh round of the European Social Surveys, 2014.

	Natives (n= 22557; 92.6%)	**Immigrants 1-10 years (n=543; 2.2%)**	**Immigrants 11-20 years (n=555; 2,3%)**	**Immigrants >20 years (n=719; 3,0%)**	***Total* (N=24,374; 100%)**	***p- value***
	%	**%**	**%**	**%**	**%**	
Socio-demographic characteristics						
Depression						
No	75,2	67,0	71,5	64,3	74,6	≤0,001
Yes	24,8	33,0	28,5	35,7	25,4	
Missing	0,0	0,0	0,0	0,0	0,0	
Sex						
Men	49,5	49,4	52,1	46,9	49,5	0,34
Women	50,5	50,6	47,9	53,1	50,5	
Missing	0,0	0,0	0,0	0,0	0,0	
Age						
18-33	29,8	57,6	30,6	10,8	29,9	≤0,001
34-49	34,6	36,3	53,5	38,7	35,2	
50-65	35,6	6,1	15,9	50,5	35,0	
Missing	0,0	0,0	0,0	0,0	0,0	
Mean	42,4	33,3	38,5	48,4	42,2	
SD	13,6	9,7	11,1	10,5	13,5	
Education level						
Less than secondary (Low)	6,7	14,0	14,2	19,2	7,4	≤0,001
Secondary (Middle)	56,9	45,6	52,6	49,4	56,3	
Tertiary (High)	36,4	40,4	33,2	31,4	36,3	
Missing	0,0	0,0	0,0	0,0	0,0	
Living with a partner						
Yes	65,0	51,5	63,8	73,0	64,9	≤0,001
No	35,0	48,5	36,2	27,0	35,1	
Missing	0,0	0,0	0,0	0,0	0,0	
Economic Dimension of Social Exclusion						
Financial difficulties while growing up						
No	60.2	45.3	47,6	40,2	59,0	≤0,001
Yes	38.6	53.8	51,7	59,2	39,8	
Missing	1.2	0.9	0,7	0,6	1,2	
Feeling about Household Income						
Living comfortably	80.8	62.2	68,3	67,4	79,7	≤0,001
Difficult/Very difficult	18.5	36.9	31,7	32,5	19,7	
Missing	0.6	0.9	0,0	0,1	0,6	
Housing Problems						
No	83.2	71.0	75,5	77,9	82,6	≤0,001
Yes	16.3	27.3	24,1	22,0	16,9	
Missing	0.5	1.7	0,4	0,1	0,5	
Activity						
Employed	65,0	44,8	58,8	63,3	64,3	≤0,001
Unemployed	7,3	17,7	14,1	8,2	7,7	
Other economically Inactive	27,5	37,5	27,1	28,3	27,8	
Missing	0,2	0,0	0,0	0,1	0,2	

(table 2 continues)

Social Dimension of Social Exclusion						
Informal Social Contacts						
Good social contacts	82.5	80.8	80,5	81,5	82,4	0,40
Poor social contacts	17.2	18.4	19,5	18,4	17,3	
Missing	0.2	0.7	0,0	0,1	0,2	
Trust in Institutions (Thin Trust)						
High	35.8	62.4	56,4	50,8	37,3	≤0,001
Low	64.2	36,6	43,4	49,2	62,7	
Missing	0.1	0.9	0,2	0,0	0,1	
Trust in people (Thick trust)						
High	52.7	50.2	54,4	46,0	52,5	≤0,01
Low	47.2	49.8	45,4	53,8	47,4	
Missing	0.1	0.0	0,2	0,1	0,1	
Cultural Dimension of Social Exclusion						
Sense of belonging to the country						
Yes	86,8	81,9	82,1	81,0	87,0	≤0,001
No	12,6	16,4	17,2	18,5	12,4	
Missing	0,6	1,7	0,7	0,5	0,6	
Political Dimension of Social Exclusion						
Political Participation						
Yes	48.7	29.5	42,3	46,5	48,0	≤0,001
No	51.3	79.9	57,5	53,5	51,9	
Missing	0.0	0.6	0,2	0,0	0,0	

n: number of cases.
SD: Standard deviation
p-value from Chi-square statistics
p values do not include missing values
Source: Elaborated by the authors based on the study results

Table 3. Prevalence Ratios and their 95% Confidence Intervals of depressive symptoms according to immigrant status, seventh round of the European Social Survey, 2014.

	Model 0 PR (CI 95%)	Model I PR (CI 95%)	Model II PR (CI 95%)	Model III PR (CI 95%)	Model IV PR (CI 95%)	Model V PR (CI 95%)	Model VI PR (CI 95%)
Immigrant Status							
Natives	1	1	1	**1**	**1**	**1**	**1**
Immigrants 1-10 yres.	**1,36(1,20-1,53)**	**1,27(1,12-1,44)**	1,13(0,98-1,28)	**1,28(1,13-1,45)**	**1,27(1,12-1,44)**	**1,27(1,13-1,45)**	1,09(0,96-1,23)
Immigrants 11-20 yres.	1,10(0,96-1,26)	1,07(0,93-1,23)	0,98(0,85-1, 11)	1,08(0,95-1,24)	1,09(0,95-1,25)	1,07(0,93-1,222)	1,02(0,89-1,16)
Immigrans >20 yres.	**1,44(1,30-1,60)**	**1,36(1,23-1,51)**	**1,27(1,15-1,40)**	**1,26(1,23-1,50)**	**1,38(1,25-1,53)**	**1,35(1,22-1,50)**	**1,23(1,11-1,36)**

Model 0 unadjusted; Model I adjusted for age, sex, level of education, and living with a partner;
Model II –V (Models adjusted separately by economic factors, social factors, cultural, and political factors respectively); Model VI (Model II + all social exclusion factors).
Yres: Years of residence
Significant associations are in bold
Source: Elaborated by the authors based on the study results

Table 4. Prevalence Ratios and their 95% Confidence Intervals of social exclusion factors according to immigrant status, seventh round of the Social Surveys, 2014.

	Economic Dimension of SE				**Cultural Dimension of SE**
	Financial difficulties while growing up	Low satisfaction with income household	Housing Problems	No economically active	Low sense of belonging
Immigrant Status					
Natives	1	1	1	1	1
Immigrants 1-10 y res.	**1,44(1,33-1,57)**	1,06(0,87-1,29)	**1,48(1,28-1,70)**	**1,37(1,26-1,49)**	1,06(0,87-1,29)
Immigrants 11-20 y res.	**1,31(1,20-1,42)**	**0,46(0,33-0,63)**	**1,28(1,10-1,50)**	**1,16(1,04-1,29)**	**0,46(0,33-0,63)**
Immigrans >20 y res.	**1,38(1,30-1,47)**	**0,65(0,50-0,85)**	**1,38(1,20-1,59)**	**0,98(0,91-1,12)**	**0,65(0,50-0,85)**
	Social Dimension of SE			**Political Dimension of SE**	
	Poor Social Contacts	Poor Institutional Trust	Poor Interpersonal Trust	Poor Political Participation	
Immigrant Status					
Natives	1	1	1	1	
Immigrants 1-10 y of res.	**1,36(1,13-1,64)**	**0,74(0,69-0,79)**	1,00(0,92-1,09)	**1,32(1,25-1,40)**	
Immigrants 11-20 y of res.	1,13(0,94-1,35)	**0,73(0,68-0,78)**	**0,90(0,82-0,98)**	1,07(0,99-1,15)	
Immigrans >20 y of res.	0,84(0,70-1,00)	**0,82(0,78-0,87)**	**1,10(1,02-1,18)**	0,97(0,90-1,04)	

Adjusted for sex, education level and living with a partner
yres.: years of residence
Significant associations are in bold
Source: Elaborated by the authors based on the study results

Chapter 6: Multidimensional Social Exclusion and Self-reported Depressive Symptoms in the Immigrant Population in Europe

6.1. Objective

To examine the association between independent and overall dimensions of social exclusion and self-reported depressive symptoms, stratified by sex in the immigrant population in Europe.

6.2. Methods

6.2.1. Design and information source

A cross-sectional study was performed using data from the seventh round of the European Social Survey (ESS) 2014. The seventh round microdata was selected for this study because of its rotating module dedicated to the social determinants of health. The ESS is a cross-national survey that has been conducted across Europe every two years since 2001 (247). The 7th round used representative cross-sectional samples of all persons aged 15 and over regardless of their nationality, citizenship or language- who reside in private households in European countries (248). Individuals were selected by strict random probability methods at every stage with sampling frames and addresses, households, and individuals used. Substitution of non-responding households or individuals (whether 'refusals,' 'non-contacts' or 'ineligibles') is not permitted at any stage (248). Data is gathered by face-to-face interviews conducted in the home of the participant. Response rates target 70%, real target lower in some countries (249).

6.2.2. Study population

The study sample included a total sample of 1816 (922 women and 895 men) immigrants in 20 European countries: Belgium, Spain, Finland, UK, Netherlands, Norway, Portugal, Sweden, Switzerland, Germany, France, Ireland, Denmark, Estonia, Lithuania, Slovenia, Austria, Czech Republic, Hungary, and Polonia. Foreign-born residents born in high-income countries according to the World Bank classification(250) were excluded. The sample was limited to working-age residents (18–65 years). The sample was limited to working-age residents (18–65 years). This age group was selected considering the following aspects: a) health outcomes might be highly influenced by aging; b) to avoid the mortality bias among the elderly; c) a common strategy used by researchers for avoiding age influence on health outcomes is to

constrain the age group to the economically active population (67, 138); and d) there was a small percentage of elderly immigrants (>65 years).

6.2.3. Dependent variable: Depressive symptoms

Depressive symptomatology was measured through the short version of the Centre for Epidemiological Studies Depression Scale (CES-D8). Questions evaluated how often during the past week respondents felt depressed; everything they did as an effort; their sleep was restless; happy; lonely; enjoyed life, sad; and could not get going out. All questions included four response categories (0 = never or almost never to 3 = all or almost all of the time). Items were summed to give a total score that ranged from 0 (the lowest level) to 24 (the highest level), a cut-off point of over eight was established for depression, as in a previous study (96).

6.2.4. Independent variables: Measures of Social Exclusion

This study used the WHO definition of social exclusion(SE), by which SE consists in dynamic, multidimensional processes driven by unequal power relationships, that operate along and interact across the cultural, economic, political and social dimensions (85). The interaction between multiple exclusionary processes makes explicit the links between social exclusion factors and the SDOH (82, 85-87). Also, SE is not the converse of social inclusion, and both are dynamic processes that can exist together (150); existing very few people excluded in all dimensions at once (153, 167). Thus, excluded individuals are those who are less advantaged in each SE factor. Also, the indicators were grouped into four dimensions –the economic, social, cultural, and political- to analyze their independent and the overall association with depressive symptoms inequalities. SE factors in each dimension are described below. It is also important to note that although political participation was considered as a political factor; it belongs to more than one dimension. For instance, political participation encompasses one of the dimensions of citizenship (206, 251), and it is considered as an indicator of social capital (183, 252).

6.2.4.1. The economic dimension of social exclusion

6.2.4.1.1.. Financial difficulties when growing up

This indicator of immigrants' early life deprivation was measured through the question "How often did you and your family experienced severe financial difficulties when you were growing up?". The response categories were "always, often, sometimes, hardly ever, never," the variable was recoded into 1= yes (always/often/sometimes) and 0= no (hardly ever/never).

6.2.4.1.2. Feeling about household income nowadays

This indicator was obtained through the question “Which of the descriptions on this card comes closest to how you feel about your household's income nowadays?. The response categories were “living comfortably on present income; coping on present income; finding it difficult on present income; finding it very difficult on present income”. It was recoded into 0= living comfortably/coping, and 1= finding it difficult/very difficult.

6.2.4.1.3.. Activity

It was measured asking about the respondent’s principal activity the week before filling out the questionnaire. The response categories (paid work, studying, unemployed, retired or disabled, housework, others) were recoded into a dummy variable: 0=employed, 1=unemployed, and 2= economically inactive, according to the OCDE definition(253) and including those individuals who answered to be studying , to be retired, and engaged in housework activity).

6.2.4.1.4. Housing problems

Housing problems were assessed through the question: “Do any of these problems apply to your accommodation?”. The options were mould or rot in windows, doors or floors, damp walls or leaking roof, lack of indoor flushing toilet, lack of bath and shower, overcrowding, and extremely hot or extremely cold (yes/no). The presence of one or more problems was considered the presence of housing problems. The variable was dichotomized in 0=absence and 1= presence.

6.2.4.2. The social dimension of social exclusion

6.2.4.2.1. Informal social contacts (bonding social capital and strong ties)

It was assessed through the question “how often do you socially meet with friends, relatives or colleagues?. The response options were: never, less than once a month, once a month, several times a month, once a week, several times a week, and every day. The variable was recoded into a dummy variable 0= good social contacts (weekly/daily) and 1= poor social contacts (monthly or less) as in previous studies (254).

6.2.4.2.2. Thick trust (trust embedded in personal relations

Trust in people was measured through three questions: “Would you say that most people can be trusted?”, “do you think that most people would try to take advantage of you?, and “Would you say that most of the time people try to be helpful?”. Answers were recoded using 10-point Likert scales. A mean for these questions was computed and converted into a 9-point Likert scale variable. Finally, it was recoded into a dummy

variable: 1= low (0 to 4 points) and high = 0 (5 to 9 points, as in previous studies (103, 255).

6.2.4.2.3. Thin trust (trust in institutions)

It was measured by asking participants about how much people trust in the country's parliament, in the legal system, in the Police, in the politicians, and in the political parties. The original answers on each specific question range from 0 to 10 (0 implied "no trust at all", and 10 implied "complete trust"). The responses for each of these five questions were added to an index that ranges from 0–50. The original 50 alternatives were dichotomized into 1= low level of trust(0–30) and 0= high level of (31–50), as in a previous study (254).

6.2.4.3. The Cultural Dimension of Social Exclusion

6.2.4.3.1. Perceived group discrimination

It was assessed through the questions "Would you describe yourself as being a member of a group that is discriminated against in this country?". Answer options were yes and no. The second question was "On what grounds is your group discriminated against?" , the response categories were color or race, nationality, religion, language, ethnic group, age, gender, sexuality, disability, other (yes/no). Individuals who answered "yes" to the first question and to the grounds: color/race, nationality, religion, language or ethnic group to the second question were considered to perceive group discrimination, as in a previous study (96).

6.2.4.4. The Political Dimension of Social Exclusion

6.2.4.4.1. Political participation and activism.

It was assessed by asking participants whether they had contacted a politician or government official, signed a petition, taking part in a lawful public demonstration in the last 12 months (Yes/No). A sum for these three variables was computed, and the variable was dichotomized in Yes= 1 (at least one activity) and No= 0 (None).

6.2.4.4.2. Citizenship

It was measured by asking respondents if they had or did not have the nationality of the country where the survey took place, the variable was dichotomized in 0= no and 1= yes.

6.2.4.5. Potencial Confounders

6.2.4.5.1.. Sex

It was coded in 0= men and 1 = women.

6.2.4.5.2. Age

It was calculated based on the respondents' year of birth. The original continuous variable was recoded into three groups: 18–33 years, 34–49 years, and 50–65 years. These age groups correspond to the economically active periods (30).

6.2.4.5.3. Educational level

The original variable was grouped according to the International Standard Classification of Education (ISCED-97) in primary or less, lower secondary, upper secondary and tertiary. Then, it was recoded into 0= less than secondary (low), secondary (middle), and tertiary (high).

6.2.4.5.4. Living with a partner

This indicator was assessed through the item "respondent lives with husband/wife/partner" (does/does not), and it was recoded into a dummy variable 0= living with a partner and 1= does not live with a partner.

6.2.4.5.5. Length of residence

The length of residence information was assessed through the question "What year did you first come to live in this country?; therefore, is based on the date of entry into the country. This variable was categorized in 0= 1-10 years; 1= 11-20; and 2= >20 years, as in previous studies (105, 195).

6.2.5. Statistical Analysis

All analyses were sex-stratified. First, a descriptive analysis was conducted by calculating absolute and relative frequencies for the categorical variables, and measures of central tendency (mean, standard deviation) for continuous variables (Tables 1and 2). Second, bivariate analyses were conducted and prevalences (%) of depressive symptoms were calculated for all the variables among excluded against non-excluded immigrants, and Chi-square tests were applied to explore differences (Table 3). Variables with a p≤0,05 were considered statiscally significant.

Finally, Robust Poisson regression models were fitted to obtain prevalence ratios (PR) (260-262) with confidence intervals CI 95%, between excluded and non-excluded groups(Table 3). In Models 0, sociodemographics and the relation with SRH was analyzed. In Models I to IV, variables related to social exclusion dimensions were analyzed separately adjusting for potential confounders (age, education level, living with a partner, and the length of residence). In model V all factors were included simultaneously being adjusted for potential confounders. All analyses were performed using weighted data as is recommended by the European Social Survey Organization

(263). A combination of two weights was used. First, the post-stratification weights that use auxiliary information to reduce the sampling error and potential non-response bias. They are obtained by adjusting the design weights (which account for differences in inclusion probabilities and corrects for bias in the sampling design) in such a way that they will replicate the distribution of the cross-classification of age-group, gender, and education in the population and the marginal distribution for the region in the population. Second, the population size weights which correct the fact that most countries that took part in the ESS have different population sizes but similar sample sizes (263). All analyses were performed using IBM SPSS Statistics for Windows version 24.0.

6.2.6. Ethical approval

This study uses secondary anonymized data. The datasets do not contain direct identifiers and were collected according to ethical standards. The European Social Survey (seventh round) dataset is freely and publicly available online for research(264). Thus, there is no specific ethical approval required for the present study.

6.3. Results

Table 5 shows the descriptive statistics for each sex. Women had higher prevalences of depressive symptoms than men (38.8% vs 26.4%). The proportions of primary and tertiary education and lower secondary education was also higher in women than in men. The median age was 41 years, and the median length of residence was approximately 14 years in both women and men.

Table 6 shows the descriptives statistics of Social Exclusion variables for each sex. Immigrants had high prevalences of social exclusion. Women had higher proportions than men of having had financial difficulties while growing up, facing housing problems, being unemployed and economically inactive, low trust in institutions, not having political participation, unmet health care needs, and not having citizenship. The proportion of finding difficult or very difficult to live with household income was higher in men than in women.

Table 7 shows the prevalences of depression according to sociodemographics and among excluded and non-excluded immigrant women and men in each independent variable. The bivariate analysis shows that excluded individuals showed higher prevalences of depressive symptoms than non-excluded, except for individuals who reported political participation which had higher prevalences than those who did not report political participation. Excluded women in each independent variable had higher prevalences of depressive symptoms than excluded men. The prevalence of

depressive symptoms was higher among younger women, older men, low educated immigrants, women living with a partner, single men, and women living in Europe for less than 20 years. All of these associations were significant ($p<0.05$) except for political participation and length of residence in men.

Multivariate association results between social exclusion factors are also shown in **Table 7**. In Women, Models 0-V showed that those who found difficult to live with household income, faced housing problems, were unemployed, with low interpersonal and institutional trust, perceived group discrimination, and those who did not have citizenship were more likely to report depressive symptoms. Women who did not politically participate, aged 34-49 years, with secondary and tertiary education, and who did not live with a partner were less likely to report depressive symptoms. In men, Models 0-V showed that those who found it difficult to live with household income, faced housing problems, were economically inactive, with low interpersonal trust, who perceived group discrimination, who did not have citizenship were more likely to report depressive symptoms. Men who did not politically participate, aged 50-65 years, who had secondary or tertiary education were less like to report depressive symptoms.

Model VI for men and women, included all social exclusion factors and sociodemographics and are shown in Table 3. Women who faced housing problems, were unemployed, with low institutional trust, and those who did not have citizenship persisted to be more likely to report depressive symptoms. To live in Europe for 20 or more years became statistically significantly associated with depressive symptoms. Women who did not politically participate, aged 34-49 years, with secondary and tertiary education, who did not live with a partner, persisted to be less likely to report depressive symptoms. In men, Model VI showed that men who found it difficult to live with household income, faced housing problems, and were economically inactive persisted to be more likely to report depressive symptoms. Men aged 50-65 years and those who did not politically participate were less like to report depressive symptoms.

6.4. Discussion

This study investigated independent and overall associations of social exclusion dimensions with self-reported depressive symptoms among immigrant women and men in Europe.

The results showed high prevalences of depressive symptoms in the immigrant population in Europe, as found in previous studies(96, 206, 275). Besides, immigrants showed high levels of social exclusion, which is in line with previous evidence that found high unemployment rates in immigrants (63, 213-216, 219), that they are more

exposed to live in substandard housing (20, 106, 270), exposed to high levels of economic stress in childhood (271, 272), they have a shorter network size, lower social support, lower levels of trust in public institutions and interpersonal trust (195), and report higher levels of discrimination (96).

Women experienced the highest levels of depressive symptoms than men. These results are consistent with findings from previous studies that found higher prevalences of depressive symptoms in immigrant women in Europe (67, 96, 221, 275). Women also had the higher proportions than men in various social exclusion factors such as having had financial difficulties while growing up, facing housing problems, being unemployed or economically inactive, not trusting in institutions, not political participating, having unmet health care needs, and not having citizenship. Previous evidence shows that female immigrants are especially vulnerable to social exclusion as they often face a double disadvantage on the basis of origin and gender, as well as problems related to their integration in the host country, and the consequent gender disadvantages in the labor market(29). Women also have disadvantages in social position, in immigrant status (134), they also suffer the double burden of having to carry out both paid and unpaid domestic work (221). Besides, women usually are considered as "partner migrants", as they follow their partner who migrates and therefore, might depend economically on them (30).

A major finding of this study is the different patterns of social exclusion between women and men showed in the multivariate analysis. In women, where including all SE variables and sociodemographics showed that facing housing problems, being unemployed, having low institutional and personal trust, not having citizenship, residing in Europe for 20 or more years, and living with a partner were associated with depresive symptoms in women. Also, in the analysis of independent associations between each dimension of SE and depressive symptoms, having difficulties in living with household income and perceiving group discrimination were also associated with depressive symptoms. In men, having difficulties in living with household income, facing housing problems, being unemployed, and political participation were associated with depressive symptoms. Also, in the analysis of independent associations of each dimension of social exclusiona and depressive symtoms, low interpersonal trust, perceiving group discrimination, and not having citizenship were associated with depressive symptoms.

Thus, in sum the results from the multivariate analysis on the overall association of SE factors and depressive symptoms, show that in women the economic, social and political factors, and in men only the economic factors were associated with depressive

symptoms. This could be explained by the fact women are are at risk of higher exclusion in more dimensions as previously explained, having also higher risk of depression. Previous studies found gaps in social capital between genders, with women having more kin relationships and men accesing to organizational social capital, showing higher levels of social trust and and political participation(103, 276). Previous studies in immigrants found associations between low social capital and poor mental health (105, 195, 228). For both genders economic exclusion factors were associated with depressive symptoms. Previous studies in the immigrant population have found independent associations between poor mental health and factors such as, being satisfied with their income level (223), unemployment (63, 216), poor housing conditions (106). In this study, women and men with low political participation were less likely to report depressive symptoms, this could reflect an opposite direction association; that those with depression are more politically active, an explanation could be that depression might be related to other factors that lead individuals to politically participate and protest. However, as this is a cross-sectional study, it cannot assure reverse association. Besides, previous studies analyzing various determinants at once, found that barriers in socioeconomic integration, discrimination, greater number of years of residence, lower education, and not having citizenship were associated with depression and poor mental health (204, 206, 245).

6.5. Limitations and strenghts

This study addresses a knowledge gap on the analysis of SE through multidimensional indicators and from the Social Determinants of Health Approach, as well as its association with depressive sympthoms among female and male immigrants in Europe. However, it has several limitations. The largest limitations is the small sample size of immigrants compared to natives; however the data in each group was adequate for conducting the analysis (274). These condition prevented the analysis of social exclusion factors in explaining depressive sympthoms segregating the data by sex and by country. It also was not possible to study second generation immigrants either; however, previous studies have not found differences in social exclusion factors and health outcomes between second-generation immigrants and natives (96, 206). As a second limitation of the study, its cross-sectional design does not allow to make causal inferences about the associations between social exclusion factors and depressive symptoms; but rather it allows to conceptually model and statistically evaluate the in this association. Finally, this study uses a self-report depression inventory for which there have been valid cut-off points established (96) but does not allow us to assess clinical depression (206). However, the use of dimensional models

is more reliable and sensitive to the nature and the degree of symptoms, and it is more suitable for regression analyses (206). Besides, this study used a widely validated scale for depression (96, 206). More studies are needed to study social exclusion segregating the analysis by sex and differentianting specific groups of immigrants such as refugees from non refugees, or by country of origin. Besides, as depression has lifelong determinants, data on the socioeconomic and living conditions gathered before migration, and during the migration process are needed for a more detailed analysis.

Table 5. Distribution of sociodemographic characteristics, depressive symptoms in immigrant women and men, seventh round of the European Social Survey. 2014.

	Women n= 922(50.8%)		Men n= 894(49.2%)	
	n	**%**	**n**	**%**
Depression				
No	564	61.2	658	73.6
Yes	358	38.8	236	26.4
Missing	0	0.0	0	0
Age				
18-33	289	31.3	271	30.3
34-49	373	40.5	399	44.6
50-65	260	28.2	225	25.1
Mean	41.3	NA	41.3	NA
SD	12.0	NA	20.1	NA
Missing	0	0.0	0	0.0
Education level				
Primary or less	164	17.8	128	14.3
Secondary	420	45.6	475	53.1
Tertiary	337	36.6	291	32.6
Missing	0	0.0	0	0.0
Living with a partner				
Yes	599	65.0	559	62.5
No	323	35.0	336	51.0
Missing	0	0.0	0	0.0
Length of residence				
1-10 years	267	28.9	251	28.9
11-20 years	266	28.8	289	32.3
>20 years	382	41.4	338	37.8
Mean	19.8	NA	20.1	NA
SD	13.6	NA	13.9	NA
Missing	8	0.9	17	1.9

SD: Standard Deviation

NA: Not applicable

Source: Elaborated by the authors based on the study results

Table 6. Distribution of social exclusion characteristics in immigrant women and men, seventh round of the European Social Survey. 2014.

	Women (n= 922)		Men (n= 895)	
	N	%	n	%
Economic Dimension				
Financial difficulties while growing up				
No	402	43.6	397	44.4
Yes	517	56.1	488	54.5
Missing	3	0.3	10	1.1
Feeling about Household Income				
Living comfortably/Coping	636	69.0	566	63.2
Difficult/Very difficult	285	30.9	324	36.2
Missing	1	0.1	5	0.6
Housing Problems				
No	701	76.1	662	74.0
Yes	219	23.8	222	24.8
Missing	1	0.1	11	1.2
Activity				
Employed	433	47.0	592	66.1
Unemployed	101	11.0	133	14.9
Other economically inactive	387	42.0	170	19.0
Missing	1	0.1	0	0.0
Social Dimension				
Informal Social Contacts				
Good social contacts	749	81.1	724	80.8
Poor social contacts	173	18.7	168	18.8
Missing	1	0.1	4	0.4
Trust in Institutions				
High	454	49.2	563	62.9
Low	463	50.2	331	37.0
Missing	5	0.6	1	0.1
Trust in People				
High	461	50.1	444	49.7
Low	459	49.8	450	50.3
Missing	1	0.1	0	0.0
Cultural Dimension				
Perceived Group Discrimination				
No	742	80.5	692	77.3
Yes	180	19.5	203	22.7
Politic Dimension				
Political participation				
Yes	340	36.9	390	43.6
No	581	63.0	501	56.0
Missing	1	0.1	4	0.4
Citizenship				
No	536	58.1	495	55.3
Yes	386	41.9	400	44.7

Table 7. Prevalence and Prevalence Ratios and their 95% Confidence Intervals of depressive symptoms in excluded and no excluded immigrants, seventh round of the European Social Survey, 2014.

	Women n= 922			Men n= 895		
		Models 0-V PR (95% CI)	Model VI PR_{full}(95%CI)		Models 0-V PR(95% CI)	Model VI PR_{full}(95%CI)
Depression						
	Prev.			Prev.		
Sociodemographics						
Age	*			*		
18-33 years	**38.8**	1	1	**31.0**	1	1
34-49 years	**33.2**	**0.87(0.80-0.95)**	**0.86(0.79-0.94)**	**27.6**	0.97(0.90-1.05)	0.99(0.92-1.07)
50-65 years	**46.9**	0.94(0.85-1.05)	0.95(0.86-1.06)	**19.1**	**0.86(0.78-0.95)**	0.91(0.83-1.00)
Education level(%)	*			*		
Primary or less	**53.3**	1	1	**39.8**	1	1
Secondary	**38.0**	**0.87(0.79-0.95)**	**0.89(0.81-0.98)**	**25.9**	**0.80(0.72-0.89)**	**0.85(0.78-0.93)**
Tertiary	**32.9**	**0.82(0.75-0.91)**	**0.86(0.77-0.95)**	**21.2**	**0.82(0.75-0.91)**	**0.87(0.79-0.96)**
Living with a partner(%)	*			*		
Yes	**41.4**	1	1	**24.0**	1	1
No	**34.1**	0.91(0.85-1.00)	0.92(0.86-1.00	**30.4**	1.02(0.95-1.09)	1.00(1.93-1.07)
Length of residence (%)	*					
1-10 years	**64.4**	1	1	29.9	1	1
11-20 years	**65,4**	0.98(0.90-1.07)	1.01(0.92-1.11)	23.2	0.94(0.87-1.02)	0.90(0.91-1.06)
>20 years	**55,5**	1.08(0.99-1.19)	**1.12(1.02-1.26)**	26.0	1.00(0.92-1.10)	1.01(0.93-1.11)
Economic Dimension						
Financial difficulties while growing up	*			*		
No	**33.7**	1	1	**22.4**	1	1
Yes	**42.9**	1.06(0.99-1.13)	1.04(0.96-1.11)	**29.3**	1.01(0.95-1.07)	1.01(0.95-1.07)
Feeling about Household Income						
Living comfortably /	*			*		
Coping	**34.8**	1	1	**17.3**	1	1
Difficult/Very difficult	**48.1**	**1.08(1.01-1.13)**	1.0(0.99-1.15)	**41.1**	**1.22(1.14-1.31)**	**1.21(1.12-1.30)**
Housing Problems (%)	*			*		
No	**35.9**	1	1	**22.8**	1	1
Yes	**48.4**	**1.09(1.01-1.18)**	**1.09(1.01-1.17)**	**36.7**	**1.10(1.04-1.18)**	**1.08(1.01-1.17)**
Activity (%)	*			*		
Employed	**34.2**	1	1	**21.3**	1	1
Unemployed	**51.5**	**1.21(1.08-1.36)**	**1.20(1.08-1.34)**	**33.3**	1.03(0.94-1.13)	1.03(0.94-1.13)
Other econ. Inactive	**40.6**	1.03(0.96-1.18)	1.04(0.96-1.11)	**38.8**	**1.20(1.09-1.31)**	**1.21(1.10-1.32)**
Social Dimension						
Informal Social Contacts (%)						
Good social contacts	37.5	**1**	1	25.0	1	1
Poor social contacts	44.8	1.08(0.98-1.18)	1.04(0.94-1.15)	31.0	1.05(0.97-1.14)	1.03(0.95-1.11)
Trust in Institutions (Thin Trust) (%)	*					
High	**33.5**	1	1	25.0	1	1
Low	**44.5**	**1.08(1.01-1.15)**	**1.09(1.02-1.17)**	28.7	1.00(0.93-1.06)	1.00(0.93-1.07)
Trust in people (Thick trust) (%)	*			*		
High	**31.7**	1	1	**22.5**	1	1
Low	**46.2**	**1.12(1.05-1,19)**	**1.07(1.01-1.15)**	**30.4**	**1.10(1.03-1.16)**	1.05(0.98-1.11)

(Table 7 continues)

Cultural Dimension						
Perceived Group Discrimination (%)	*			*		
No	**36.5**	1	1	**23.0**	1	1
Yes	**48.3**	**1.09(1.02-1.18)**	1.06(0.98-1.15)	**37.9**	**1.12(1.04-1.21)**	1.01(0.94-1.10)
Politic Dimension						
Political participation (%)	37.0			*		
Yes	43.3	1	1	**25.0**	1	1
No		**0.80(0.84-0.96)**	**0.89(0.83-0.96)**	**35.0**	**0,93(0.87-0,97)**	**0.92(0.87-0.92)**
Citizenship	*			*		
Yes	**36.0**	**1**	**1**	**22.2**	1	1
No	**43.0**	**1.14(1.06-1.23)**	**1.12(1.04-1.20)**	**31.5**	**1.06(0.99-1.13)**	1.04(0.97-1.11)

Prev.: Prevalence

Models 0 to V show the association between each dimension of social exclusion and depressive symptoms adjusted for socio-demographics; Models VI included all social exclusion factors and socio-demographics. *: p≤ 0.05 (p-value of comparing prevalence among excluded and non-excluded). PR significant p-values are in bold

Source: Elaborated by the authors based on the study results

Chapter 7: Multidimensional Social Exclusion and Self-reported Health in the Immigrant Population in Europe

7.1. Objective

To examine the association between independent and overall dimensions of social exclusion and self-reported health in the immigrant population in Europe.

7.2. Methods

7.2.1. Design and information source

A cross-sectional study was performed using data of the European Quality of Life Survey (EQLS) 2016, carried out by the European Foundation to collect comparable and reliable data on quality of life across Europe. EQLS is carried out every 4 years. In 2016, the cross-sectional suvey was conducted in the 28 EU Member States, Albania, the former Yugoslav Republic of Macedonia, Montenegro, Serbia and Turkey with representative sample of 36.908 residents aged 18 and over. Multi-stage, stratified, random sample in each country. Sampling was carried out using individual-level, household-level and address-level registers or through enumeration using a random-walk approach, samples were stratified by region and degree of urbanisation. In each stratum, primary sampling units (PSUs) were randomly selected proportional to population size. Finally, in each household the respondent was randomly selected. Data was gathered by face-to-face interviews conducted in the home of the participant (277).

7.2.2. Study population

The study sample included a total sample of 1268 (589 women and 679 men) immigrants in the EU-28. Foreign-born residents born in high-income countries according to the World Bank classification (250) were excluded. The sample was limited to working-age residents (18–65 years). This age group was selected considering the following aspects: a) health outcomes might be highly influenced by aging; b) a common strategy used by researchers for avoiding age influence on health outcomes is to constrain the age group to the economically active population (67, 138); c) to avoid mortalitu bias; and c) there was a small percentage of elderly immigrants (>65 years).

7.2.3. Dependent variable: Self-rated Health

Self-reported health (SRH) is one of the most widely multidimensional indicator of physical and psychological health. SRH is also a strong predictor of mortality, morbidity, and use of health services (278-280). It was assessed through the question:

'In general, how is your health?'. The answer was dichotomized into good (very good/ good) and poor (fair/ bad/ very bad). This categorization has been used in previous studies (96, 134, 234).

7.2.4. Independent variables: Measures of Social Exclusion

This study used the WHO definition of social exclusion(SE), by which SE consists in dynamic, multidimensional processes driven by unequal power relationships, that operate along and interact across the cultural, economic, political and social dimensions (85). The interaction between multiple exclusionary processes makes explicit the links between social exclusion factors and the SDOH (82, 85-87). Also, SE is not the converse of social inclusion, and both are dynamic processes that can exist together (150); existing very few people excluded in all dimensions at once (153, 167). Thus, excluded individuals are those who are less advantaged in each SE factor. Also, the indicators were grouped into four dimensions –the economic, social, cultural, and political- to analyze their independent and the overall association with poor self-rated health. SE factors in each dimension are described below. It is also important to note that although political participation was considered as a political factor; it belongs to more than one dimension. For instance, political participation encompasses one of the dimensions of citizenship (206, 251), and it is considered as an indicator of social capital (183, 252).

6.3.4.1. The economic dimension of social exclusion

6.3.4.1.1. Housing problems

Housing problems were assessed through the question: "Do you have any of the following problems with your accommodation?". The options were shortage of space, rot in windows, doors or floors, damp or leaks in walls or roof, lack of indoor flushing toilet, lack of bath or shower, lack of facilities (heating or cooling) to keep a comfortable temperature at home (yes/no). The presence of one or more problems was considered the presence of housing problems. The variable was dichotomized in 0=absence and 1= presence.

6.3.4.1.2. Material deprivation

This indicator was obtained through the question "For each of the following things on this list , can I just check whether your household can afford it if you want it?. The response categories were "Keeping your home adequately warm, paying for a week's annual holiday away from home (not staying with relatives), replacing any worn-out furniture; a meal with meat, chicken, fish every second day if you wanted it, buying new, rather than second-hand, clothes; having friends or family for a drink or meal at least

once a month. Not able to afford at least one of these was considered as material deprivation and a new variable was created and it was categorized as 1= yes and 0 = No.

6.3.4.1.3. Activity

It was measured asking about the employment status. The response categories were employed, unemployed, in education, full-time homemaker, retired, others), this variable were recoded into 0=employed, 1=unemployed, and 2= economically inactive according to the OCDE definition (253) and including those individuals who answered to be in education , to be retired, and were full-time homemaker).

6.3.4.2. The social dimension of social exclusion: Social Capital

6.3.4.2. 1Informal social contacts

It was assessed through the question "how often do you have direct face-to-face contact with the following people living outside your household?. The response options were: everyday or almost everyday, at least once a week, one to three times a month, less often, never. The variable was recoded into a dummy variable 0= good social contacts (eveyday, almost everyday, at least one a week) and 1= poor social contacts (one to three times a month, less often, never) as in previous studies (254).

6.3.4.2.2. Formal social contacts

Formal social contacts was measured through the question: "how often did you do unpaid voluntary work through the following organisations (community and social services, educational, cultural, sports or professional associations, social movents, political parties and others) in the last 12 months?". The answer options were: every week, every month, less often/occasionally, not at all. The variable was recoded into a dummy variable 0= good formal social contacts (every week, every month) and 1= poor social contacts (less often, never).

6.3.4.2.3. Thick trust or interpersonal trust (trust embedded in personal relations)

Trust in people was measured through the question: "would you say that most people can be trusted, or that you can't be too careful in dealing with people?". Answers were recoded into a scale of 1 to 10, where 1 meaning that one can't be too careful and 10 meaning that most people can be trusted. It was recoded into a dummy variable: 1= low (0 to 4 points) and high = 0 (≥ 5 points).

6.3.4.2.4. Thin trust (trust in institutions)

It was measured by asking participants if they trust in the country's parliament, in the legal system, new media, the police, the government, and the local authorities. The answers were recorded into a 1 to 10 points scale, where 1 meant to not trust at all, and 10 meant to trust completely. A mean for these questions was computed and converted into a 10-point scale variable. Finally, it was recoded into a dummy variable: low = 1 (0 to 4 points) and high = 0 (5 to 9 points).

6.3.4.3. The Political Dimension of Social Exclusion

6.3.4.2.5. Political participation and activism

It was assessed by asking participants whether they had attended a meeting of a trade union, a political party or political action group, attended a protest or demonstration, signed a petition, including an e-mail or on-line petition, contacted a politician or public official, commented on a political or social issue online, boycotted certain products (Yes/No). A sum for these variables was computed, and the variable was dichotomized in Yes= 1 (at least one activity) and No= 0 (None).

7.3.4.3. The Cultural Dimension of Social Exclusion

6.3.4.4. Connection with society

The EQLS 2016 included four items aimed at eliciting views on how people feel about their connection with society(281). They were asked if they felt left out of society, if life had became so complicated that they almost can't find their way, if they felt that the value of what they do was not recognised by others, if some people look down on them because of their job situation or income. The answers were evaluated through 5-point Likert scales (1= Strongly agree to 5= Strongly disagreed). These four items together form the Social Exclusion Index (SEI), with values ranging from 1 to 5(281) and which was included in the EQLS database. This SEI was replicated for this study, first the 5-point Likert scales were inversed (1= Strongly disagreed to 5= Strongly agree) and a mean was calculated for the 4 items, obtaining an index ranged from 1 to 5, being 1 and 2 indicating disagreement, 3 neutral and 4 and 5 indicating agreement as in previous EQLS surveys(282, 283). The index obtained had the same values of the SEI included in the EQLS database.

A new variable was created "Connection with society" and dichotomized in 1= Yes (values 1 to 3) and 0 = No (values 4 and 5), as used for analysis previously (282).

6.3.5. Potential confounders

6.3.5.1. Sex

It was coded in 0= men and 1 = women.

6.3.5.2. Age

It was calculated based on the respondents' year of birth. The original continuous variable was recoded into three groups: 18–33 years, 34–49 years, and 50–65 years. These age groups correspond to the economically active periods (30).

6.3.5.3. Educational level

The original variable was grouped according to the International Standard Classification of Education (ISCED-97) in primary or less, lower secondary, upper secondary and tertiary. Then, it was recoded into 0= less than secondary (low), secondary (middle), and tertiary (high).

6.3.5.4. Marital status

This indicator was assessed asking respondents about their marital status. It was coded into 1= Married and 0= Single (Never married, separated, widowed, divorced).

7.2.5. Statistial Analysis

First, a descriptive analysis was conducted by calculating absolute and relative frequencies for the categorical variables, and measures of central tendency (mean, standard deviation) for continuous variables (Tables 1and 2). Second, bivariate analyses were conducted and prevalences (%) of poor self-rated health (PSRH) were calculated for all the variables among excluded against non-excluded immigrants, and Chi-square tests were applied to explore differences (Table 3). Variables with a p≤0,05 were considered statiscally significant.

Finally, Robust Poisson regression models were fitted to obtain prevalence ratios (PR) with confidence intervals CI 95% (260-262) between excluded and non-excluded groups(Table 3). In Model 0, sociodemographics and their relation with SRH was analyzed. In Models I to IV, variables related to social exclusion dimensions were analyzed separately adjusting for sociodemographics. In model V, all factors were included simultaneously being adjusted for age , education level, and marital status. All analyses were performed using weighted data for cross-national metrics EU-28 (284). All analyses were performed using IBM SPSS Statistics for Windows version 24.0.

7.2.6. Ethical approval

This study uses secondary anonymized data. The datasets do not contain direct identifiers and were collected according to ethical standards. The Fourth European Quality of Life Surveys (EQLS) 2016 dataset is freely and available for research, after registration to the UK Data Archive. Thus, there is no specific ethical approval required for the present study.

7.3. Results

Table 8 shows the descriptive statistics. 22% of the immigrant population reported poor self-rated health (PSRH). There were more men (53.6%); the median age was approximately 40 years; most immigrants had primary and secondary education, most were married and were aged between 30 and 49 years.

Table 9 shows the sample descriptives statistics of Social Exclusion variables. The higher proportions of social exclusion were seen in the following SE factors: facing housing problems, facing material deprivation, poor formal social contacts, low interpersonal trust, and no political participation. Most of the immigrants were employed.

Table 10 shows prevalences of self-rated health according to sociodemographics and among excluded and non-excluded immigrants. The bivariate analysis shows that excluded individuals showed higher prevalences of PSRH than non-excluded in all social exclusion factors. Also, sociodemographics showed significant associations with PSRH ($p<0.05$) except for sex.

Multivariate associations between social exclusion factors (PR: CI95%) are shown in **Table 10**. Model 0 shows that the risk of PSRH increase with aging, and immigrants with tertiary education had lower probability to report PSRH (PR:0.69; CI95%:0.49-0.97). In Model I, immigrants facing housing problems (PR: 1.46; CI95%:1.20-1.78), those unemployed (PR:1.48; CI95%1.32-1.95) and economically inactive (PR:1.98; CI95%: 1.56-2.51) had higher probability of reporting PSRH. In Model II, immigrants with poor formal social contacts (PR:1.70; CI95%:1.16-2.52) and in Model III those who did not politically participate (PR:1.78; CI95%: 1.25-2.59) had higher probability to report PSRH. In Model IV, immigrants who did not felt connection with society had higher probability of reporting PSRH (PR: 1.40; CI95%: 1.13-1.73). When all social exclusion factors and sociodemographics were included in Model V, these associations persisted.

7.4. Discussion

This study found associations between independent and overall dimensions of social exclusion and self-reported health in the immigrant population in Europe. The results showed high levels of social exclusion in immigrants, which is in line with previous studies that found high rates of unemployment (63, 213-216, 219), material deprivation (134, 285), lack of social support (67, 185, 226-229), poor institutional and interpersonal trust (195), and substandard housing (20, 106, 270) among immigrants.

Independent associations were found between facing housing problems, to be unemployed, and economically inactive and PSRH. A previous study in adults assisted by Caritas in Barcelona, Spain, which included a majority of immigrants, has shown that people facing housing problems have poorer health status than general population even when compared to those in the most deprived social classes (106). Evidence has shown that non-European origin is associated with a higher disadvantage in finding employment among immigrants (213, 219).

Poor formal social contacts and not having political participated has been associated with PSRH. There is a growing literature linking immigration, individual social capital, and health; though studies in this field mainly focus on the role of social networks and ties in the integration of immigrants (185). Besides, immigrants leave their social network in their home country and might take years to build a social network in the host country (195). Thus, immigrants are a particularly vulnerable group in this sense and might not benefit from them as connections within associations that allow sharing of resources. Previous evidence shows that poor levels of social capital were associated with poor physical health among immigrants (88, 230) while perceived loneliness was related to poor physical health (185).

The connection with society was associated with PSRH. This indicator has been categorized based on the EQLS Social Exclusion Index composed of four items that measured how people felt about their connection with society (61). These items are related to the concept of social cohesion which represents the absence of exclusion and contrast between a sense of belonging to society versus isolation, participation versus non-engagement, recognition versus rejection. It is increasingly cited in the literature that social cohesion links with the dependence on social capital maintenance and formation (172) and it is a social determinant of health itself (42) associated with good self-rated health (286), and positive mental health among immigrants (251).

When analyzing all SE factors together, the associations found in Models 0-IV persisted. Previous studies that analyzed various social determinants at once,

analyzed their contribution to inequalities in PSRH in poor self-rated health; finding that worse employment status, not having sufficient income low social support, discrimination, and lower educational levels mediate inequalities in PSRH between immigrants and natives (98, 185, 214, 217, 221, 227). These factors might also represent those related to PSRH in the immigrant population in Europe. More studies are needed analyzing social determinants of PSRH considering dimensions of social exclusion and determinants of immigrants health.

7.5. Limitations and strenghts

This study addresses a knowledge gap on the analysis of social exclusion through multidimensional indicators and from the Social Determinants of Health Approach, as well as its association with poor self-rated health in migrants in Europe. However, it has several limitations. The largest limitations is the small sample size of immigrants compared to natives; however the data in each group was adequate for conducting the analysis (274). These condition prevented the analysis of social exclusion factors in explaining poor self-rated health (PSRH) segregating the data by sex and by country. It also was not possible to study second generation immigrants either; however, previous studies have not found differences in social exclusion factors and health outcomes between second-generation immigrants and natives (96, 206). As a second limitation of the study, its cross-sectional design does not allow to make causal inferences about the associations between social exclusion factors and PSRH; but rather it allows to conceptually model and statistically evaluate the in this association. Also there are many issues that might affect the comparability of multi-country studies and produce some bias: nonresponse, translations, and conduct. If these issues are related to PSRH or one of the independents(206).

Table 8. Distribution of sociodemographic characteristics, and poor self-rated health in immigrants, fourth European Quality of Life Survey 2016.

	N= 1268(100%)	
	n	**%**
Self-rated health		
No	991	78.0
Yes	277	22.0
Missing	0	0.0
Sex		
Male	679	53.6
Female	589	46.4
Missing	0	0.0
Age		
18-33	381	30.1
34-49	594	46.9
50-65	292	23.1
Mean	40.2	NA
SD	11.3	NA
Missing	0	0.0
Education level		
Primary or less	547	43.1
Secondary	438	34.6
Tertiary	278	21.9
Missing	5	0.4
Marital Status		
Single or divorced	446	35.2
Married	820	64.7
Missing	1	0.1

SD: Standard Deviation

NA: Not applicable

Source: Elaborated by the authors based on the study results

Table 9. Distribution of **social exclusion** characteristics in immigrants, fourth European Quality of Life Survey 2016.

	N= 1268(100%)	
	n	**%**
Economic Dimension		
Housing Problems		
No	746	58.9
Yes	521	41.1
Missing	0	0.0
Material Deprivation		
No	621	49.0
Yes	647	51.0
Missing	0	0.0
Activity		
Employed	822	64.8
Unemployed	168	13.2
Other economically inactive	278	22.0
Missing		
Social Dimension		
Informal Social Contacts (face-to-face)		
Good social contacts	985	77.7
Poor social contacts	282	22.3
Missing	0	0.0
Formal Social Contacts		
Good social contacts	227	17.9
Poor social contacts	1023	80.7
Missing	18	1.4
Trust in People		
High	585	46.2
Low	677	53.4
Missing	5	0.4
Trust in Institutions		
High	831	65.5
Low	394	31.1
Missing	43	3.4
Politic Dimension		
Political participation		
Yes	275	21.7
No	986	77.8
Missing	7	0.5
The Cultural Dimension: The EQLS measure of Social Exclusion		
Connection with society		
Yes	1015	80.1
No	253	19.9
Missing	0	0.0

Source: Elaborated by the authors based on the study results

Table 10. Prevalence and Prevalence RaΘos and their 95% Confidence Intervals of poor self-rated health between excludes and no excluded immigrant, fourth European Quality of Life, 2016.

		N= 1268 (100%)	
		Models 0-IV	**Model V**
		PR (95% CI)	**PR_{full}(95%CI)**
Self-rated health	**Prev. (%)**		
Sociodemographics			
Sex			
Male	21.5	1	1
Female	22.3	1.09(0.89-1.34)	0.80(0.64-1.01)
Age	*		
18-33	**7.3**	1	1
34-49	**17.8**	**2.09(1.41-3.08)**	**2.04(1.33-3.01)**
50-65	**49.0**	**5.48(3.76-7.95)**	**5.76(3.89-8.53)**
Education level	*		
Primary or less	**28.9**	1	1
Secondary	**18.5**	0.80(0.62-1.03)	**0.75(0.58-0.97)**
Tertiary	**13.3**	**0.54(0.38-0.76)**	**0.69(0.49-0.97)**
Marital Status	*		
Single or divorced	**16.1**	1	1
Married	**24.9**	1.10(0.86-1.40)	1.20(0.94-1.53)
Economic Dimension			
Housing Problems	*		
No	**18.9**	1	1
Yes	**26.1**	**1.46(1.20-1.78)**	**1.48(1.21-1.82)**
Material Deprivation	*		
No	**18.5**	1	1
Yes	**25.0**	1.07(0.88-1.30)	0.92(0.75-1.13)
Activity	*		
Employed	**17.3**	1	1
Unemployed	**28.1**	**1.48(1.13-1.95)**	**1.68(1.27-2.23)**
Other economically inactive	**31.5**	**1.98(1.56-2.51)**	**1.84(1.44-2.35)**
Social Dimension			
Informal Social Contacts (face-to-face)	* **23.7**	1	1
Good social contacts	**15.5**	0.84(0.63-1.12)	0.81(0.60-1.08)
Poor social contacts			
Formal Social Contacts	*		
Good social contacts	**13.2**	1	1
Poor social contacts	**24.1**	**1.70(1.16-2.52)**	**1.72(1.18-2.51)**
Trust in People	*		
High	**18.1**	1	1
Low	**24.8**	1.10(0.88-1.39)	1.05(0.83-1.33)
Trust in Institutions	*		
High	**20.0**	1	1
Low	**26.1**	0.91(0.71-1.15)	0.96(0.75-1.22)
Politic Dimension			
Political participation	*		
Yes	**12.7**	1	1
No	**24.4**	**1.78(1.25-2.59)**	**1.70(1.17-2.49)**
Cultural Dimension			
Connection with society	*		
Yes	**20.3**	1	1
No	**28.2**	**1.40(1.13-1.73)**	**1.28(1.04-1.58)**

Prev.: Prevalence; * p≤ 0.05(p-value of comparing prevalence among excluded and non-excluded and p-value of PR). Models 0 to V: adjusted for sociodemographic; Model VI: additionally, adjusted for social exclusion factors. Prevalence Ratios (PR) 95%CI of excluded vs. non-excluded immigrants; Significant values are in bold. Source: Elaborated by the authors based on the study results.

Chapter 8: Conclusions and Policy implications

The general aim of this thesis was to analyze the multidimensional factors of social exclusion and their associations with health outcomes in immigrants living in Europe, stratifying the analysis by sex and length of residence. Also, to examine the mediating role of social exclusion in explaining health inequalities in mental health between native and immigrant populations according to length of residence in Europe. The three studies comprised in this thesis suggest that there are independent and overall associations between social exclusion factors and poor self-rated health and depressive symptoms among the immigrant population in Europe. Also, that various social exclusion factors analyzed at once, and economic exclusion factors in isolation thoroughly explain inequalities in depressive symptoms for newly-arrived immigrants (1-10 years of residence).

In study I, immigrants had a higher prevalence of depressive symptoms than natives; those residing in Europe for 1-10 years and ≥20 years had the highest prevalence of symptoms. Immigrants in both these groups were more likely to have depressive symptoms than natives. This association was non-significant for immigrants living in Europe for 11 to 20 years. Adjusting for socio-demographics these associations persisted and slightly decreased for both immigrant groups that were eligible for mediation. Multidimensional social exclusion factors analyzed together, and the economic exclusion factors in isolation completely explained these differences for immigrants residing in Europe for 1-10 years and partially for immigrants residing for ≥20 years.

In study II, women had a higher prevalence of depressive symptoms (DS) than men. There were different patterns in social exclusion in its association with DS. In women, those who found it difficult to live with household income, faced housing problems, were unemployed, had low institutional trust, did not have citizenship, and had ≥20 years of residence were more likely to report depressive symptoms. In men, those who found it difficult to live with household income, faced housing problems, and were economically inactive were more likely to report depressive symptoms.

In study III, about 22% of the immigrant population reported poor self-rated health (PSRH). When social exclusion factors were analyzed together, PSRH was associated with facing housing problems, with being unemployed or economically excluded, with having poor formal social contacts, with no political participation, and with not feeling a connection with society.

As the research on multidimensional social exclusion and immigrants' health is still limited, further research is necessary including the Social Determinants of Health approach. It is also necessary to segregate data analysis by sex and to differentiate specific groups of immigrants such as refugees from nonrefugees, or by country of origin. Besides, data on the socioeconomic and living conditions gathered before migration, and during the migration process are needed for a more detailed analysis.

Policies should offer migrants the possibility to settle in good social and economic condition, promote efforts to eliminate social exclusion and prevent the associated health inequalities. Thus, immigrants might be able to achieve their development potential and contribute to the social and economic development of their countries of origin and destination. This is especially important in the context of the economic crisis in Europe, and its impact on health might be the cause for the loss of the healthy immigrant effect especially in countries that have been particularly affected by the this crisis. Policies promoting the economic integration of immigrants into the labour market are needed, especially if they have other socio, cultural, and political disadvantage (e.g., low education, discrimination, and not having citizenship). Employment and social security services might be an attempt to identify immigrants as a disadvantaged group as well as improving their skills and education. Also, in the current context in Europe, it is important for policymakers to act in softening the xenophobic and racist political discourses towards immigrants, as tolerance and adaptation would contribute to immigrant integration in the economic and social dimensions.

Immigrants, especially the newly arrived- tend to settle and participate in their diaspora associations. This might have positive implications –information about the host country- and negative implications - ethnic concentration and spatial segregation-. Thus, there is a need for social integration policies to improve the community participation of immigrants in host countries. Also, one particularly important area for policymakers is to reframe policies understanding the interactions between economic and social integration and exclusion dynamic processes, as well as between different dimensions of social exclusion. For instance, employment and policies that target economic integration might not be sufficient for the social integration of migrants, and social, cultural, and political integration might also facilitate the integration of migrants. Finally, most of the studies so far have focused on analyzing social exclusion and integration from the immigrant perspective. It is also essential to analyze how the same policies influence the native population's attitudes and behavior toward immigrants and how they facilitate or generate barriers to integration.

Besides, the results in this thesis reflect the need for gender-oriented social and integration policies. Women and men are particularly exposed to economic exclusion (insufficient income, unemployment). This integration and immigration policies should challenge the dominant perception of ‘unskilled’ migrants, seek to improve skills recognition, improve working conditions and help in regulating the informal economy of both the feminized low paid domestic care work and the informal work among men.

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Appendix A: Scoping Review Summarizing Tables

Table 11. Studies on social exclusion and health outcomes in general and immigrant populations in Europe							
First Author and year	**Aim**	**Design and Data**	**Sample Size and Study Population**	**Independent Variables related SDH and SE Dimensions**	**Outcome Variables**	**Analysis and measures**	**Conclusions**
Studies using multidimensional indicators of social exclusion							
van Bergen, A. (2017)	To construct and validate an extended national measure for Social Exclusion (SE), the SE Index for Health Surveys (SEI-HS)	Validation of an index of Social Exclusion based on data from four surveys. The Netherlands Public Health Monitor (PHM) questionnaires 2012.	General Population (The Netherlands) A sample of 258,928 Dutch divided into a development sample (N =129,464) and a validation sample (N = 129,464).	**a) "limited social participation"** (e.g. experiencing a general sense of emptiness, the existence of people to lean on when having problems, missing having people around); **b) "material deprivation"** which measured the difficulty during the previous year in getting by on the household income (enough money to heat home, to pay for memberships, to visit others, and to meet unexpected expenses); **c) "inadequate access to social rights"** (e.g. people in the neighborhood that generally do not get along with each other, help each other, can be trusted, degree of satisfaction with housing); **d)"lack of normative integration"** (giving to good causes, doing something for the neighbors, putting glass items in the bottle bank, work is just a way to earn money).		Canonical Correlation. The psychometric properties were studied and compared with those of a a previous scale. All analyses were then replicated in the validation sample	The study demonstrates that the SEI-HS offers epidemiologists and public health researchers a uniform, reliable, valid and efficient means of assessing social exclusion and its underlying dimensions. The study also provides valuable insights into how to develop embedded measures for public health surveillance.
van de Beek, M. (2017)	To investigate the association between experiences of social exclusion and self-reported depressive symptoms and psychotic experiences in Moroccan-Dutch migrants.	A cross-sectional study using an online survey (2012-2014).	Immigrant Population (The Netherlands) A convenience sample of 267 Moroccan-Dutch migrants. Aged 18-57 years.	-Perceived discrimination - Social defeat - Social Support **-**Sociodemographics: age, gender, first and second generation status, level of education, previous mental healthcare.	-Depressive symptoms -Psychotic experiences	Logistic regression anyalises :linear regression, multivariate linear regression,	There were high levels of psychopathology in the sample. Suggesting that part of this young ethnic minority population might not get adequate mental healthcare. As this population was reached

							through internet, the online environment may offer a setting for intervention, to increase resilience towards social exclusion.
Malmusi, D. (2017)	Aims to study whether country integration policy models were related to inequalities by immigrant. status in depressive symptoms in Europe	Cross-sectional study using data from 17 countries in the sixth wave of the European Social Survey (2012)	Immigrant and Native Populations (The EU) A sample of non-immigrants, N= 28,333, and immigrants N =2041	-Country classification (contextual indicator): three integration policy regimes (inclusive, assimilationist, and exclusionist). -Adjusting variables: age, sex, and education level, then sequentially by citizenship, perceived discrimination, and socio-economic variables	Depressive symptoms were assessed with the eight-item version of the Center for Epidemiologic Studies Depression scale.	Linear regression	Across most European countries, immigrants seem to experience more depressive symptoms than the population born in the country, mostly reflecting their poorer socio-economic situation. Inequalities are larger in countries with more restrictive policies.
Malmusi, D. (2015)	To explore the relationship of country-level integration policy with immigrants' health status in Europe.	Cross-sectional study with data from the 2011 European Union Survey on Income and Living Conditions in 14 countries.	Immigrant and Native Population (Spain) People born in the country (natives, n = 177 300) or outside the European Union with >10 years of residence (immigrants, n = 7088). Aged 16 years and older.	-Policy Index (contextual indicator): "multicultural' (highest scores: UK, Italy, Spain, Netherlands, Sweden, Belgium, Portugal, Norway, Finland), 'exclusionist' (lowest scores: Austria, Denmark) and 'assimilationist' (high or low depending on the dimension: France, Switzerland, Luxembourg). -adjusting by age, educational level, occupation social class, the economic situation of the household (household income, material deprivation, ability to make ends meet, living in an overcrowded household) -citizenship status	-self-rated health	*Analysis Stratified by sex Robust Poisson regression models (PR).	Immigrants in 'exclusionist' countries experience poorer socio-economic and health outcomes. Future studies should confirm whether and how integration policy models could make a difference on migrants' health.
Borrell, C. (2015)	To analyse the association between perceived discrimination and health outcomes among first and second	Cross-sectional study, based on the 2012 European Social Survey.	Immigrant Population (The EU) A sample of 1271 men and 1335 women	-Perceived group discrimination -Immigrant background (First and Second generation) -National immigrant integration policy(contextual indicator). Other variables:	-Self-reported health -Symptoms of depression -Limitation of activity	*Analysis stratified by sex. Robust Poisson regression models were fitted to obtain	Perceived group discrimination is associated with poor health outcomes in first generation immigrants from low-income

	generation immigrants from low-income countries living in Europe, while accounting for sex and the national policy on immigration.		from low-income countries aged ≥15 years in 18 European countries.	Age, sex, citizenship, educational level (primary or less, lower secondary, upper secondary and tertiary), marital status (married/cohabiting, separated/divorced/widowed, never married), activity (paid work, studying, unemployed, retired or disabled, housework, others).		PR.	countries who live in European countries, but not among their descendants. These associations are more important in assimilationist countries than in the others.
van Bergen, A. (2014)	To develop a nationally validated and standardized measure to monitor social exclusion in regular public health surveys.	Validation of an index of Social Exclusion based on data from four public health surveys from the Community Health Services in 2008 of the four largest cities in the Netherlands.	General Population (The Netherlands) A sample of 19,658 respondents aged 19 years and older.	a) lack of normative integration, which means the non-compliance with core values of society (no having respect for people, not saying "thank you"; b) limited social participation (social isolation, limited participation in social networks); c) material deprivation (debts, basic goods and services, such as washing machine or hot meal); and d) inadequate access to social rights (having access to healthcare, sufficient education and a proper living environment).		Nonlinear canonical correlation analysis (OVERALS), which measures the degree to which the items contribute to the underlying variable. A set of variables is compared to an unknown compromise set defined by the objectives.	Their findings indicate that a measure for social exclusion can be constructed with available health questionnaires. This provides opportunities for application in public health surveillance systems in the Netherlands and elsewhere in the world.
Levecque, K. (2014)	First, to assess whether migrants in Europe are at higher risk for depression compared to the native population. Second, to assess whether the association between migration and depression is dependent on different forms of migrant integration. Migrant integration is looked at both from the individual and from the national level.	Cross-sectional study based on data for 20 countries in the European Social Survey 2006/2007	Immigrant and Native Population (The EU) (N = 37,076 individuals aged 15 or more)	-first- and second-generation migrants, ((EU) or non-EU origin) -barriers to integration (low educational level, financial difficulties, being out of the labor market, ethnic minority status, discrimination), -the host country environment (national migrant integration policy). Control by gender, age, partner relationship, social support, and welfare state regime	-Depression (Epidemiologic Depression Scale)	-Hierarchical linear regression	In Europe, first-generation EU and non-EU migrants experience higher levels of depression. Second-generation migrants and natives show similar risk profiles.
Bryngelson,	The research question	longitudinal data	General	-The economic variable:"having	-Long-term	Logistic	The study suggests that

A. (2009)	raised there is therefore to examine the relationship between long-term sickness absence (60 days) and social exclusion among individuals.	from the Swedish Level of Living Survey	Population (Sweden) A cohort of women and men, 18 to 55 years old in 1991, was followed for nine years. 3,144 individuals responded in 2000	no cash margins''. -The political variable: "not voting in the last election" -Two social variables: ''having no close friends'' and ''being single/ unmarried'' Multidimensional variables were obtained by combining the previous: -''having no cash margins plus not voting in an election'' -''having no cash margins plus being single/unmarried and having no close friends''.	sickness absence (as the occurrence of at least one spell of full-time sickness absence, 60 days or longer).	regression analyses(Odds ratios).	long-term sickness absence increases the risk of adverse economic and social conditions among individuals. That these conditions can be seen as indicators of social exclusion is more doubtful.
Studies including indicators of two or more dimensions of social exclusion							
Rivera, B. (2015)	To provide empirical evidence to demonstrate that the mental health of immigrants in Spain deteriorates the longer they are resident in the country.	Cross-sectional study, using data from the National Survey of Health of Spain 2011–2012.	Immigrant Population (Spain) 1478 individuals who were born abroad and had come to Spain when they were 15 years of age or older.	.Time of residence in Spain .region of origin -Individual social capital -Socio-demographics: age, sex, education levels, employment status, family characteristics, and type of work undertaken	-Mental health (GHQ)	Negative binomial model (NB model), In which the variance/mean ratio is linear on the latter. Coefficient (SE) Marginal effects (SE)	The need for further research is especially true in the case of the immigrant population's mental health in Spain because there is scant evidence available on their situation.
Gotsens, M., Malmusi, D. (2015)	To analyse health inequalities between immigrants born in the middle- or low-income countries and natives in Spain, in 2006 and 2012, taking into account gender, year of arrival and socioeconomic exposures.	Study of trends using two cross-sections, the 2006 and 2012 editions of the Spanish National Health Survey,	Immigrant and Native Populations (Spain) Residents in Spain aged 15–64 years (20 810 natives and 2950 immigrants in 2006, 14 291 natives and 2448 immigrants in 2012.	-Main independent variable: Immigrant status -Year of arrival Adjustment variables: -Age -Educational level -employment status -social class -social support -overcrowding	-Fair/poor self-rated health -poor mental health -chronic activity limitation -use of psychotropic drugs	*Analysis stratified by sex Robust Poisson regression models (PR).	Between 2006 and 2012, immigrants who arrived in Spain before 2006 appeared to worsen their health status when compared with natives. The loss of the healthy immigrant effect in the context of a worse impact of the economic crisis on immigrants appears as a potential explanation. Employment, social protection and re-universalization of health care would prevent further

							deterioration of immigrants' health status.
Fernandez, A. (2015)	To estimate the impact of being personally affected by an economic crisis on health-related quality of life (HRQoL), taking into account the possible buffering effect of perceived social support.	The longitudinal study, first wave (March 2012 to November 2012).	General Population (Spain) A sample of 143 participants from a deprived neighbourhood in Barcelona, Spain. Mean age: 53.7, who speak Spanish.	- Having experienced a personal economic crisis (economic crisis and fired from his or her job) - Low Self-perceived social support (confidant support and affective support) Adjusted by sex and age	Health-related quality of life: -Physical Health -Mental health	The effect of the economic crisis on HRQoL was assessed using ordinary least squares (OLS) regression models.	Social support constitutes a safety net that offers protection against the adverse effect of economic
Novoa, A. (2015)	To describe the housing conditions and health status of a sample of people assisted by Caritas Barcelona (Spain) and living in inadequate housing and/or struggling to pay their rent or mortgage, to compare the health outcomes of this population with those of the overall population of Barcelona, and to analyze the association between housing dimensions and mental health.	Cross-sectional study, based on a survey in 2012.	Individuals assisted by Caritas (including immigrants) and General population Adults (n = 320) and children (n = 177) living in the dioceses of Barcelona, Sant Feliu and Terrassa (Spain) in 2012 and assisted by Cáritas.	-Socio-demographics (age, social class, education degree, foreign born, Legal status, employment status, family composition, social support) - Housing conditions (4 dimensions: affordability, emotional link with the dwelling, dwelling conditions and neighborhood and community conditions	-Self-reported health -Quality of life -Poor mental health (anxiety and depression) -self-reported depression or anxiety in the previous year. -Use of tranquilizers, antidepressants, or sleeping pills the previous two days -A self-reported migraine or frequent headaches during the previous year -A self-reported backache during the previous years -averaging less than 6 hours of sleep per night during working days	Analyses were stratified by type of Caritas's service (DAS or HMS) and sex. Multivariate logistic regression models aOR, CI95%.	This study has shown how, in a country hit by the financial recession, those people facing housing problems have much worse health compared to the general population.

Rodriguez-Álvarez, E. (2014)	To analyze health inequalities between native and immigrant populations in the Basque Country (Spain) moreover, the role of several mediating determinants in explaining these differences.	Cross-sectional study, Data used from the 2007 Basque Health Survey (for natives) and the 2009 Basque Health Survey for Immigrants.	Immigrant and Native Population (Spain) A sample of 4,270 natives and 745 immigrants from China, Latin America, the Maghreb, and Senegal. Aged 18-64.	Main independent variable: -Place of birth Adjusting variables: -Socio-demographic variables and migratory status (length of stay, permit of residence, Spanish comprehension, educational level, and employment situation) -Low Social Support -Perceived discrimination	-Poor self-perceived health.	*Analysis stratified by sex Logistic regression to estimate ORs (crude and adjusted).	The results show the need to continue monitoring social and health inequalities between the native and immigrant populations, as well as to support the policies that improve the socioeconomic conditions of immigrants.
Dreger, S. (2014)	To investigate the association between psychosocial, sociodemographic and material determinants of positive mental health in Europe.	A cross-sectional study based on the the third wave of the European Quality of Life Survey (2011–2012).	General Population (The EU) A sample of 21 066 men and 22 569 women aged 18 years and over, from 34 European countries.	-Material factors(household tenure, housing problems, neighborhood problems, material deprivation, financial problems, quality of services -Psychosocial factors (marital status, presence of children, social support, social network, trust, political participation, religion, social exclusion ((feelings of lack of recognition/ confusion in life/exclusion/inferiority), marital status, presence of children. -Sociodemographic factors (age, educational level, urbanisation level, and citizenship (European/non-European).	Positive mental health (PMH) as measured by the WHO-5—Mental Well-being Index, while the lowest 25% centile indicated poor positive mental health	*Analyses were stratified by sex Multilevel logistic regression analyses to examine the association between the potential determinants and PMH.	This study gives the first overview on determinants of positive mental health at a European level and could be used as the basis for preventive policies in the field of positive mental health in Europe.
Gil-González, D. (2014)	(1) To study the prevalence and probability of perceived racism and other forms of discrimination on the immigrant and Spanish populations within different public spheres; (2) to show the effect of perceived racism and other forms	Cross-sectional study using data from the Spanish Health Interview Survey (SHIS) (2006)	Immigrant and Native Populations Spain 29,476 individuals i> 16 years	-Exposure to racism (Perceived racism) -Exposure to other types of discrimination (based on sex social class, religion, and sexual orientation) -Explicative variables: Age, Employment Status Marital Status, Level of education, Country of Origin, Social Class, Social Support.	-Self-perceived health -Mental Health -Hypertension -Consumption of antidepressants and stimulants -Having had an injury -Unmet need for medical care	*Analysis Stratified by sex The Breslow-day Homogeneity of Risks test. a p-value of 0.014. Multivariate logistic regression analyses, aOR, and CI95%.	For both the Spanish and immigrant populations, young people, from the manual social classes, irrespective of their employment status, who have completed secondary education and have low levels of social support, perceive

	of discrimination on the health of the migrant population residing in Spain.				-Smoking status	Health-related problems attributable to perceived racism was calculated using the attributable population proportion (PAP) expressed in percentages.	more racism. Racism affects men's health, while racism with other forms of discrimination affects women's health. Half of the reported cases of poor mental health in foreign men are attributed to racism, while most cases of injury in foreign women are attributed to racism together with other forms of discrimination.
Schütte S. (2013)	To explore the associations between socio-demographic, psychosocial, material and occupational factors and self-reported health (SRH) in the European working population. Another objective was to examine whether these associations varied according to occupation and country.	A cross-sectional study based on data from the European Quality of Life Survey 2007.	General Population (The EU) A sample of 17 005 (part/full-time) workers from 31 European countries.	-Socio-demographic (age, occupation (ISCO), living in the rural/urban area, and origin (European/non-European). -Psychosocial factors (marital status, presence of children, social support, social network (frequency of contacts with family/friends/neighbors, political participation, trust level, social exclusion (feelings of pessimism/ inferiority/ loneliness/ uselessness and lack of recognition/acceptance, seven items) and religion (practicing often/ rarely/ never). -Material Factors(household tenure, housing problems, material deprivation (not able to afford at least one of these amenities/activities, financial problems , neighborhood problems, access to medical services, quality of public services . -Occupational factors (job insecurity, psychological demands, influence at work, reward, work – life imbalance long working hours.	-Self-rated health	*Analyses were stratified by sex. Multilevel logistic regression analyses. aOR and CI95%.	Various factors were associated with poor SRH. This study gave a first European overview of the associations between sociodemographic, psychosocial, material and occupational factors and SRH in Europe and could provide better advice to policy-makers at a European level.
Ahnquist, J. (2012)	To analyze independent	Cross-sectional study using the	General Population	-Economic hardships (household income, inability to meet	- self-rated health	*Analyses are stratified by	1) Low social capital and 2) low

	associations, and interactions, of lack of economic capital (economic hardships) and social capital (social participation, interpersonal and political/institutional trust) on various health outcomes.	2009 Swedish National Survey of Public Health	(Sweden) A sample of 23,153 men and 28,261 women aged 16 - 84 years.	expenses and lacking cash reserves). - Social capital (social participation, interpersonal (horizontal) trust and political (vertical/ institutional trust) trust in parliament. Adjusted by: -Age, country of birth, educational Level, Employment Status, family status, long-term illness	-psychological distress (GHQ-12) -musculoskeletal disorders.	gender Multiple logistic regression analyses to estimate the association between social capital, economic hardships and health outcomes. aOR and CI95%. -Synergy Index (SI).	economic capital at the individual level is independently associated with poor health outcomes, and 3) combined they seem to contribute to an increased burden of poor health.
Urbano-Garrido, R. (2012)	The aim of this paper is to provide new evidence about the factors driving socioeconomic inequalities in health for the Spanish population by including housing deprivation and social interactions as health determinants.	Cross-sectional study based on the Spanish sample of European Statistics on Income and Living Conditions (EU-SILC) Survey for 2006.	General Population (Spain) A sample of 25,498 individuals aged >16 years.	-Socio-demographic characteristics (Age, sex, region of residence, immigrant status, family status, socioeconomic status, educational level, labor status) - Living conditions (housing conditions, social interactions, and geographic environment)	-Poor self-assessed health - Chronic conditions -Functional dimension of health (any kind of limitations in the previous six months)	The concentration index -Several models are estimated to test the influence of different regressors for three proxies of ill-health Ranked by income and the cumulative proportion of ill health.	Health inequalities can be mostly reduced or shaped by policy, as they are mainly explained by social determinants such as labour status, education and other socioeconomic conditions. The major role played on health inequality by variables taking part in social exclusion points to the need to focus on the most vulnerable groups.
Poortinga, W. (2012)	To explore the role of social capital in building community resilience and health, using the bonding, bridging , and linking social capital framework of Szreter and Woolcock (2004). Objectives: The objectives are to examine (1) to what extent indicators of different aspects of social capital are interrelated, (2) how these indicators are	Data from the 2007 and 2009 Citizenship Survey collected in England	General Population (England) n = 17,572	-Bonding, bridging, linking social capital at the individual level. -Household, employment status, and neighbourhood deprivation -Sociodemographics: gender, age, marital status, children in the household	-Self-rated health	Pearson's correlation coefficients. Multilevel regression models: Logistic regression models were constructed for the dichotomous variables of civic participation, , and political activism. Linear regression models were	No support was found for the hypothesis that the different aspects help buffer against the detrimental influences of neighbourhood deprivation.

	linked to neighbourhood deprivation, and (3) the associations of different aspects of bonding, bridging, and linking social capital with individual self-reported health. (4) whether the different aspects of bonding, bridging, and linking social capital help buffer against the detrimental health influences of neighbourhood deprivation. 5) to determine whether and to what extent they contribute to the resilience of communities to deal with deprivation					constructed for the other social capital indicators:	

Table 12. Results of the Studies on Social Exclusion and Health among the general and immigrant populations in Europe		
First Author	**Outcome Variables**	**Results**
Studies using multidimensional indicators of Social Exclusion		
van Bergen, A. (2017)	Construction and validation of an Index of Social Exclusion	The SEI-HS showed adequate internal consistency for both the general index and for two of four dimension scales. The internal structure and construct validity of the SEI-HS were satisfactory and similar to the original SCP index. Replication of the SEI-HS in the validation sample confirmed its generalizability.
van de Beek, M. (2017)	Depression symptoms Psychotic experiences	Out of the 267 participants; 87% were female. 27% of the sample has received mental healthcare in the past. Over 50% of these people screened positive for depressive symptoms and psychotic experiences. Perceived discrimination and social defeat were significantly associated with psychotic experiences and social defeat was associated with depressive symptoms. Social support and higher education were associated with less depressive symptoms and psychotic experiences.
Malmusi, D. (2017)	Depressive symptoms	In all integration regimes, immigrants report signifcantly more depressive symptoms than non-immigrants. The gap is the largest in exclusionist countries (immigrants score 1.16, 95% CI 0.65–1.68, points higher than nonimmigrants in the depression scale), followed by assimilationist countries (0.85 and 0.57–1.13) and inclusive countries (0.60 and 0.36–0.84). Financial strain explains all the associations in inclusive countries, most of it in assimilationist countries, but only a small part in exclusionist countries.
Malmusi, D. (2015)	Self-reported health	Compared with multicultural countries, immigrants report worse health in exclusionist countries (age-adjusted PR, 95% CI: men 1.78, 1.49–2.12; women 1.58, 1.37–1.82; fully adjusted, men 1.78, 1.50–2.11; women 1.47, 1.26–1.70) and assimilationist countries (age adjusted, men 1.21, 1.03–1.41; women 1.21, 1.06–1.39; fully adjusted, men 1.19, 1.02–1.40; women 1.22, 1.07–1.40). Health inequalities between immigrants and natives were also highest in exclusionist countries, where they persisted even after adjusting for differences in socio-economic situation.
Borrell, C. (2015)	Poor-self perceived health Depression	The study found significant associations between perceived group discrimination and health outcomes in first generation immigrants: poor self-perceived health in women (PR 1.31, 95% CI 1.04–1.66 in the full multivariate model); depression in both men (PR 1.55, 95% CI 1.16–2.07 in the full. Multivariate model) and women (PR 1.47, 95% CI 1.15–1.89 in the full multivariate model); and limitation of activity in men (PR 1.49, 95% CI 1.13–1.98 in the full multivariate model) and women (PR 1.51, 95% CI 1.08–2.11 in the full multivariate model). In inclusive countries, the multivariate models show a positive association between perceived discrimination and depression, among both men and women, and limitation of activity among women. In assimilationist countries, perceived discrimination was associated with all health outcomes except poor self-perceived health among men. For example, in the multivariate model, the PR for depression was 2.23 in men (95% CI 1.27–3.92) and 1.87 in women (95% CI 1.23–2.84). In exclusionist countries, perceived discrimination was associated with poor self-perceived health among women.
van Bergen, A. (2014)	Construction and validation of an Index of Social Exclusion	The internal consistency of the indices and most of the dimension scales were adequate, and the internal structure of the indices was as expected. Both generalisability and construct validity were good: in all datasets, strong associations were found between the index and some known risk factors of social exclusion. A limitation of content validity was that the dimension ‘‘lack of normative integration’’ could not be measured because no relevant items were available.
Levecque, K.(2014)	Depression	Natives and second-generation migrants do not differ significantly in their risk profile for depression. First-generation migrants show higher levels of depression, with those born outside of Europe to be the worst off. This higher risk for depression is not attributable to ethnic minority status but is mainly due to experienced barriers to socioeconomic integration and processes of discrimination. A country’s national policy on migrant integration shows not to soften the depressing effect of being a first generation migrant nor does it have indirect beneficial health effects by reducing barriers to integration.
Bryngelson, A.	Long-term sickness absence	The results suggest that both women and men have higher odds of having no excess cash (‘‘cash margins’’) after their long-term sickness

(2009)		absence, compared with people with no such sickness absence. Women seem more likely to have no cash margins combined with being single/unmarried and having no close friends after long-term sickness absence, than do women without such sick-listing. The results indicate a slight mediating effect of employment status on the odds ratios for these economic and social conditions.
Studies including indicators of two or more dimensions of social exclusion		
Rivera, B. (2015)	Mental health	Immigrants who reside less than 10 years in Spain appear to be in a better state of mental health than that observed for the national population. The level of mental health declines for immigrants who have spent more than 10 years in Spain. Studying health disparities in the foreign population and its evolution is relevant to ensure the population's access to health services and care. Individual perceived the social support has a positive relationship with the mental health indicator. There are better levels of mental health among those who are married and have a work contract in the host country.
Gotsens, M., Malmusi, D. (2015)	-Fair/poor self-rated health -poor mental health -chronic activity limitation -use of psychotropic drugs	Inequalities in poor self-rated health between immigrants and natives tend to increase among women (age-adjusted PR2006 = 1.39; 95% CI: 1.24–1.56, PR2012 = 1.56; 95% CI: 1.33–1.82). Among men, there is a new onset of inequalities in poor mental health (PR2006 = 1.10; 95% CI: 0.86–1.40, PR2012 = 1.34; 95% CI: 1.06–1.69) and an equalization of the previously lower use of psychotropic drugs (PR2006 = 0.22; 95% CI: 0.11–0.43, PR2012 = 1.20; 95% CI: 0.73–2.01).
Fernandez, A. (2015)	Poor Physical Health	There was no statistical association between having suffered an economic crisis and physical HRQoL.
	Poor mental health	The interaction between social support and economic crisis was also tested without finding any statistical association. An interaction was detected between social support and economic crisis about mental HRQoL; those who had low levels of social support and had also experienced an economic crisis had the lowest levels of mental HRQoL (OR: -18, 85 (–29.53 to –8.17)
Novoa, A. (2015)	Health status and Poor mental health	Foreign-born individuals made up a large proportion of both the DAS (93.7 %) and the HMS (57.9 %), the majority of which came from Central and South America. However, the legal situation of the immigrants differed between the two groups: 43.7 % of the DAS participants were undocumented immigrants compared to 2.1 % of the HMS sample. In Barcelona, people seeking Caritas's help and facing serious housing problems had a much poorer health status than the general population, even when compared to those belonging to the most deprived social classes. For example, 69.4 % of adult participants had poor mental health compared to 11.5 % male and 15.2 % female Barcelona residents. Moreover, housing conditions were associated with poor mental health. In men, they found that overcrowding was associated with better mental health, and hypothesized that it might be due to a social safety network to fall back on in difficult times. Such social support could lead to improved mental health.
Rodriguez-Álvarez, E. (2014)	Poor self-perceived health	Immigrants had poorer perceived health than natives in the Basque Country, regardless of age. These differences could be explained by the lower educational level (primary education: OR 2,20; 95%CI 1,56-3,09, secondary education: OR1,49; 95% CI 1,10-2,03), worse employment status (unemployment: OR 1,50; 95%CI 1,20-1,88), lower social support (OR 3,86; 95%CI 2,82-5,29), and perceived discrimination among immigrants (OR 3,77; 95% CI 1,78-7,95), both in men and women. After adjustment for all the variables, health status was better among men from China (OR 0.18;95% CI 0.04-0.91) and Maghreb (OR 0.26; 95% CI 0.08-0.91) and Latin American women (OR 0.36; 95% CI 0.14-0.92) than in the native population.
Dreger, S. (2014)	Poor positive mental health	The prevalence of poor positive mental health was 30% in women and 24% in men. Material, as well as psychosocial, and sociodemographic factors were independently associated with poor positive mental health in a Europe-wide sample from 34 European countries. When studying all factors together, the highest OR for poor positive mental health was reported for social exclusion (men: OR=1.73, 95% CI 1.59 to 1.90; women: OR=1.69, 95% CI 1.57 to 1.81) among the psychosocial factors. Among the material factors, material deprivation had the highest impact (men: OR=1.96, 95% CI 1.78 to 2.15; women: OR=1.93, 95% CI 1.79 to 2.08).
Gil-González, D. (2014)	-Poor mental health -Use of psychotropics	Health problems attributable to racism through the population attributable proportion (PAP). Immigrants perceived more racism than Spaniards in the workplace (ORM = 48.1; 95 % CI 28.2–82.2) and receiving health care (ORW = 48.3; 95 % CI 24.7–94.4). Racism and other forms of discrimination were associated with poor mental health (ORM = 5.6; 95 % CI 3.9–8.2; ORW = 7.3; 95 % CI 4.1–13.0) and injury (ORW = 30.6; 95 % CI 13.6–68.7). It is attributed to perceived racism the 80.1 % of consumption of psychotropics (M), and to racism with other forms of discrimination the 52.3 % of cases of injury (W). Racism plays a role as a health determinant. For both the Spanish and immigrant populations, young people, from the manual social classes, irrespective of their employment status, who have completed secondary education and have low levels of social support, perceive more racism.

Schütte, E. (2013)	Self-rated health	When all four groups of factors were studied together, age, occupation, urbanization level, origin, trust level, social exclusion, material deprivation, financial and neighbourhood problems, access to medical services, quality of public services, psychological job demands, job reward, work–life imbalance and dangerous/unhealthy working conditions were associated with poor SRH. Almost no differences were found in these associations according to occupation and country
Ahnquist, J. (2012)	Poor Self-rated Health	Presence of economic hardships. Women: 1.84 (1.63- 2.08) Men: 2.04 (1.76- 2.38) Social capital: low social participation. Women: 1.33 (1.17- 1.50) Men: 1.33 (1.18- 1.51) low interpersonal trust. Women: 1.74 (1.57- 1.92) Men: 1.65 (1.47- 1.84) low political/institutional trust. Women: 1.54 (1.40- 1.69) Men: 1.45 (1.31e-1.62)
	Psychological distress (GHQ-12)	Presence of economic hardships . Women: 1.78 (1.59- 2.00)Men: 2.04 (1.74- 2.39) Social capital: low social participation. Men: 1.25 (1.08-1.46) Men: low interpersonal trust. Women: 1.89 (1.66e 2.03) Men: 1.73 (1.57e 1.96) low political/institutional trust. Women: 1.34 (1.20e 1.49) Men: 1.16 (1.02e 1.32) Significant interactive effects measured as synergy index were observed between economic hardships and all various types of social capital. The synergy indices ranged from 1.4 to 2.3
Urbano-Garrido, R. (2012)	Ill-health	29.2% of the population declares his/her health as fair, poor or very poor, the percentage of people declaring chronic illnesses reach 21.8%, while 20.3% of the total sample suffers from limiting conditions. A significant proportion of Spanish households suffers from some housing or financial deprivation (30.9% and 47.2%, respectively). On the attitude toward collective organizations, 65% of individuals participate in organized non-work activities. Health Inequality is mainly explained, besides age, by social factors such as labor status and financial deprivation. Housing deprivation contributes to pro-rich inequality in a percentage ranging from 7.17% to 13.85% and social interactions from 6.16% to 10.19%. Ill-health was significantly related to being low educated, being a female and being a foreigner, poor frequency of contacts with friends.
Poortinga, W. (2012)	Poor self-rated health	The results show that the indicators of the different types of social capital are only weakly interrelated, suggesting that they capture different aspects of the social environment. In line with the expectations, most indicators of bonding, bridging, and linking social capital were significantly associated with neighborhood deprivation and self-reported health. In particular, bonding and bridging social cohesion, civic participation, heterogeneous socio-economic relationships, and political efficacy and trust appeared essential for community health after controlling for neighborhood deprivation.

Table 13.. The Independent Associations between Social Exclusion Dimensions and Health among immigrants in Europe

The Economic Dimension of Social Exclusion

First Author and year	Aim	Design and Data	Sample Size and Study Population	Independent Variables related SDH and SE Dimensions	Outcome Variables	Analyses and measures	Conclusions
Heggebø, K.(2017)	To examine whether immigrants and descendants with ill health are particularly prone to unemployment during an economic downturn in Europe.	A cross-sectional study based on The European Union Statistics on Income and Living Conditions (EU-SILC) 2011.	Immigrant Population (The EU) The sample size varies from 2736 (Norway) to 21,237 (Italy), but is typically around 4–7000 in each country.	-Chronic illness -Self-perceived health -Immigrant status (born-country and descendant from a foreign-born mother) -Age, education level, being married, gender.	-Unemployment	Ordinary least square (OLS) regression analysis.	Both minority status and ill health are associated with high unemployment probability in Europe. However, there does not seem to exist a 'double disadvantage' for immigrants and descendants with ill health, which is in line with a human capital perspective on how employers evaluate potential employees. Both a non-native-sounding name and bad health status are interpreted as a risk factor, but there is no reason to expect ill health to lower the productivity level more if the applicant is a descendant or immigrant.
Petrelli, A. (2017)	To investigate variation of self-perceived health status in Italians and immigrants during the economic global crisis, focusing on demographic and socioeconomic factors	A cross-sectional design based on the national sample of multipurpose surveys "Health conditions and use of health services" (2005 and 2013) conducted by the Italian National Institute of Statistics (ISTAT).	Immigrant and Native populations Italy People aged between 18 and 64 (in 2013 n = 72.476 and in 2005 n = 80.661), which represents a population of 37,290,440 people resident in Italy (33,900,000 Italians and 3,390,440 immigrants) in 2013, and of 36,852,745 (35,040,000 Italians and	-Immigrant Status (Foreigner/Native) -age group (18–34, 35–49, 50–64), level of education (high, medium, low), employment (yes/not), self-perceived economic resources (excellent/adequate, scarce/insufficient), smoking habits (never smoked, former smoker, smoker), body mass index (normal weight, underweight, overweight/obese).	-Self-perception health (based on a Physical and Mental Health Index)	Log-binomial regression models. Prevalence rate ratios (PR).	The findings support the hypothesis that economic global crisis could have negatively affected health status, particularly mental health, of Italians and immigrants. Furthermore, results suggest socioeconomic inequalities increase, in economic resources availability dimension. In a context of public health resources' limitation due to financial crisis, policy decision makers and health service managers must face the challenge of equity in health.

			1,812,745 immigrants) in 2005.				
Leopold, L. (2017)	The study asks whether immigrants suffer more from unemployment than German natives.	Study based on longitudinal data from the German Socio-Economic Panel Study (1990-2014).	Immigrant and Native Populations Germany N = 34,767 persons aged 20 to 64; N = 210,930 person-years).	-Unemployment (more than a year) -Pre-unemployment characteristics -Immigrant Status -Traditional gender roles (house labour, provider) -Homeownership -Household income, size of the living unit, quality of housing. -Marital status, religioness Control variables: age, an indicator of periodic changes in well-being associated with economic downturns .	-Subjective well-being	Fixed-effects models to trace within-person change in subjective well-being across the transition from employment into unemployment and over several years of continued unemployment .	Immigrants in Germany suffer more from unemployment than German natives. Findings direct attention to immigrant men as a particularly vulnerable group. Future research is needed to explore whether, and to what extent, the effects of job loss among immigrant men extend to other outcomes, and to other individuals.
Teixeira, A. (2016)	The study aims at examining how factors relating to immigrants' experience in the host country affect psychological distress (PD). Specifically, the study analyzed the association among socio-economic status (SES), integration in the labor market, specific immigration experience characteristics, and PD in a multiethnic sample of immigrant individuals residing in Lisbon,	A cross-sectional study based on a healthcare-seeking patterns survey among the immigrant population in Portugal (2009).	Immigrant Population Portugal A sample (n = 1375) consisting of all main immigrant groups residing in Portugal's metropolitan area of Lisbon,	-demographic characteristics: age, gender, region of origin (control variables). - socio-economic status (educational attainment, sufficient income). -labor market variables (having stable employment and employment status). -immigrant experience (number of children, live with a partner or family, length of residence (0 to 2 years, from 3 to 10 years, from 11 to 20 years, and more than 20 years), and irregular migrant status. -health variables : perceptions and experiences accessing healthcare services (language barriers, discrimination, lack of intercultural competences of health providers).	- Psychological distress. It was measured asking the respondents if they usually felt physically tired (F1), psychologically tired (F2), happy (F3), anxious (F4), full of energy (F5) or lonely (F6), since residing in Portugal.	Multivariable linear regression models	The study findings emphasized the importance of labor market integration and access to good quality jobs for immigrants'psychological well-being, as well as the existence of family ties in the host country, intention to reside long term in the host country, and high subjective (physical) health.

	Portugal						
Benach, J. (2015)	To show the prevalence of precarious employment in Catalonia (Spain) for the first time and its association with mental and self-rated health, measured with a multidimensional scale.	A cross-sectional study was conducted using data from the II Catalan Working Conditions Survey (2010).	Immigrant and Native Populations Spain 969 salaried workers (746 Spanish workers and 223 foreign-born workers). Aged > 16 and who had worked at least one hour in the previous week.	-Nationality Precariousness employment (Four dimensions: temporality, salary, vulnerability, and exercise of rights)	Self-perceived health Mental health	*Analysis stratified by sex - Regression log-binomial models. Prevalence Ratios PRa and CI95%.	Precarious employment is associated with poor health in the working population. Working conditions surveys should include questions on precarious employment and health indicators, which would allow monitoring and subsequent analyses of health inequalities.
Cayuela, A (2015)	To examine differences between workers related to migrant status, self-perceived and mental health, and to assess their relationship to occupational conditions, educational level, and occupational social class, stratified by sex.	Cross-sectional study. Data from the Spanish National Health Survey (2011/12) was used.	Immigrant and Native Populations Spain 7880 natives and 711 immigrants from low-income countries and residing in Spain for eight years or more.	-Main independent variable: Migratory Status (based on country of birth and length of stay) -Occupational conditions (work related stress, job satisfaction, physical demands, employment conditions) -Educational level, occupational social class based, age.	-self-perceived health -mental health	*Analysis stratified by sex Multivariate logistic regression to estimate ORs (crude and adjusted). Explained Fractions to estimate the influence of each variable and all variables together using the equation EF = [(ORa-1) - (ORb-1)]/(ORa-1)].	Migrant status is related to health inequalities among workers but only for women. Settled working immigrant women in Spain face important health inequalities related to self-perceived health and mental health. They are a vulnerable group and are possibly unprotected on questions of working rights. Other occupational and working life factors should be studied further.

Novoa, A. (2015)	To describe the housing conditions and health status of a sample of people assisted by Caritas Barcelona (Spain) and living in inadequate housing and/or struggling to pay their rent or mortgage, to compare the health outcomes of this population with those of the overall population of Barcelona, and to analyze the association between housing dimensions and mental health.	Cross-sectional study, based on a survey in 2012.	Individuals assisted by Caritas (including immigrants) and General population Adults (n = 320) and children (n = 177) living in the dioceses of Barcelona, Sant Feliu and Terrassa (Spain) in 2012 and assisted by Cáritas.	-Socio-demographics (age, social class, education degree, foreign born, Legal status, employment status, family composition, social support) - Housing conditions (4 dimensions: affordability, emotional link with the dwelling, dwelling conditions and neighborhood and community conditions	-Self-reported health -Quality of life -Poor mental health (anxiety and depression) -self-reported depression or anxiety in the previous year. -Use of tranquilizers, antidepressants, or sleeping pills the previous two days -A self-reported migraine or frequent headaches during the previous year -A self-reported backache during the previous years -averaging less than 6 hours of sleep per night during working days	Analyses were stratified by type of Caritas's service (DAS or HMS) and sex. Multivariate logistic regression models aOR, CI95%.	This study has shown how, in a country hit by the financial recession, those people facing housing problems have much worse health compared to the general population.
Robert, G. (2014)	To evaluate the influence of changes in employment conditions on the incidence of the poor mental health of immigrant workers in Spain, after a period of 3 years, in the context of economic crisis.	Follow-up survey conducted at two-time points, 2008 and 2011.	Immigrant Population Spain 318 workers in 2008 and 214 in 2011. From Colombia, Ecuador, Morocco, and Romania residing in Spain. Aged < 45 years in	Legal situation, Acquisition of Spanish nationality, employment contract, social security registration, employment status, working weekly hours, days off, Monthly job net income (in euros)	Mental Health	Separate logistic regression models for each employment path,. aOR, CI95%.	There was an increase in poor mental health among immigrant workers who experienced deterioration in their employment

			2008.				
Vives, A. (2013)	To contribute with quantitative evidence regarding the association between employment precariousness as measured with the EPRES, and poor mental health among waged and salaried workers in Spain	Cross-sectional study, from the population-based Psychosocial Factors Survey, was carried out in 2004-2005 in Spain.	General Population Spain 5679 temporary and permanent workers.	Employment Precariousness Scale (EPRES), The EPRES is a six-dimensional scale, including 'temporariness,' 'disempowerment,' 'vulnerability,' 'wages,' 'rights,' and 'exercise rights'. Sociodemographic: sex, age, SEP (educational level and occupation), immigrant status (country of origin yes/no), unemployment during the previous year, Socioeconomic position (educational level and occupation). Adjusted by sociodemographics	-Poor Mental Health	Multivariate log-binomial regressions to estimate adjusted prevalence proportion ratios PPRs,CI 95%.	The study finds a gradient association between employment precariousness and poor mental health, which was somewhat stronger among women, suggesting an interaction with gender-related power asymmetries. Further research is needed to strengthen the epidemiological evidence base and to inform labor market policy-making.
Dunlavy, A. (2013)	to: (1) describe the distribution of adverse psychosocial and physical working conditions among native and foreign background workers in Sweden; (2) analyze the risk for poor health outcomes among foreign background workers compared to that of native workers; and (3) determine if exposure to adverse working	A cross-sectional study using data from the 2010 wave of the Swedish Level of Living Survey (LNU) and the Level of Living Survey for Foreign Born Persons and their Children	Immigrant Population Sweden Currently employed adults aged 18–65 (n= 4201).	-Migrant background: Western European, Eastern European, Latin-American, other Non-Western (Asian, African), native background. -Working Conditions :Psychological working conditions (demands and decisions) - Age, sex, occupational class and civil status	-Self-perceived health -Mental distress	Regression models to estimate odds ratios (OR) Explained Fractions were also calculated.	Although adverse working conditions only minimally influenced the excess risk for poor self-rated health and mental distress found among some groups of foreign born workers, the reduction of health inequalities and improvement of working conditions among foreign background populations should remain public health priorities.

	conditions may influence associations between health and foreign background status.						
Ronda, E. (2013)	To describe self-reported working exposure in Spanish and foreign-born workers.	A cross-sectional study using data from the ITSAL Project Survey 2008.	Immigrant Population Spain 1,841 foreign-born and 509 Spanish workers from Barcelona, Huelva, Madrid, and Valencia. Aged 20-40 years.	-Main explanatory variable: Migrant status (foreign-born-Spanish-born) -Socio-demographics: Occupation, sex, age, the highest level of education.	-Self-reported working exposure to risks.	*Analysis stratified by sex Multivariate logistic Analysis, aOR, and CI95%.	There is a need to collect occupational health data from migrant workers based on sufficiently large samples of both men and women in working conditions surveys. Some groups of migrant workers may need increased protection regarding some occupational exposures.
Aichberger, M. (2012)	To examine the association of socioeconomic status (SES) and emotional distress in women of Turkish descent and in women of German descent.	A cross-sectional survey study.	Immigrant Population Germany A total of 405 women of German or Turkish descent residing in Berlin	-Unemployment -Socioeconomic Position (level of education, employment status, and income) -	-Emotional distress (Scale)	Multivariate linear regression analyses.	The impact of socioeconomic hardship appears to be complicated by social roles and expectations related to these. Further in-depth study of the complex nature of the interaction of social roles and socioeconomic position in female Turkish immigrants in Germany is needed to better understand differing risk patterns for emotional distress
Solé, M. (2010)	To estimate the impact of the working conditions in the probability of acquiring a permanent disability between immigrants and natives in Spain.	Cross-sectional study. Continues sample of the 2006 Working lives of the Social Security Survey in Spain.	Immigrant Population Spain 37,880 immigrants and 681,078 native-born Spanish. 18-65 years.	Working conditions: -Temporary contract, self-employed, Low-skilled job, Years since the first enrolment in the Social Security system, unemployment. -Country of birth, age, gender, educational level,	Permanent disability Illness, injuries	Probit model, Xβ mean.	Working conditions have a strong effect on health, similar to that of other variables, such as education. While immigrants are less likely to suffer a disability than native-born workers, these differences are diluted the longer they stay in Spain. A labor market that relegates immigrants to the riskier jobs can be expected to translate into future health inequalities.
Sousa, E. (2010)	To analyse the relationship of legal status and employment conditions with	Cross-sectional study, using data collected between 2008 to 2009 as part of	Immigrant Population Spain 1,849 foreign-born (from	-Legal status/ working situation (Work Permission and type of contract) Adjusting variables: --Employment Conditions (type of	-Self-perceived health -Mental Health	* Stratified by sex and length of stay. Logistical regression	Contract type is a health determinant in both foreign-born and Spanish-born workers. This study offers an uncommon exploration of undocumented migration.

	health indicators in foreign-born and Spanish-born workers in Spain	the ITSAL Project (Immigration, work, and health Project)	Morocco, Ecuador, Romania, and Colombia), and 509 Spanish-born workers. Aged < 40 .	contract) -Sex, age, the level of education, a sector of economic activity, monthly income.		models to obtain ORa, and IC95%.	
Malmusi, D. 2010)	To test empirically the relevance of migrant type classification and to explore the intersections of migration type with gender and social class in the analysis of social inequalities in health status in Catalonia.	Cross-sectional study Data from the Living Conditions Survey, LCS of Catalonia(2006), and the Health Interview Survey, HIS of Catalonia (2006).	Immigrant and Native Populations Spain 10,408 individuals in the HIS (5086 women and 5322 men and 7107 in the LCS) (3510 women and 3597 men) and aged 25-64.	-Social Class -Migration Type (Place of birth, Length of residence) -Age -Social Class -Material conditions -Employment conditions	-Self-assessment of general health	*Analysis stratified by sex Binomial Logistic Regression to obtain ORs and IC 95%.	Social class and gender inequalities were evident in both health and socio-economic conditions and within both the native and immigrant subgroups. They were mainly limited to those from poor areas, were consistent with their socio-economic deprivation, and apparently more pronounced in manual social classes and especially for women.
Agudelo-Suarez. A. (2009)	To describe the migratory process and health characteristics of the immigrants with work experience in Spain.	Cross-sectional study based on the ITSAL Project Survey 2008.	Immigrant Population Spain 2434 workers (57.4% men) from Colombia, Ecuador, Morocco, and Romania	Migratory process (reasons for migrating, time of residence), legal status and the personal working conditions, health profile, and work and life expectations.	-Self-perceived health (before and after migration) -Absenteeism because of health problems - Work related injuries - Mental Health	Analysis Stratified by Country of origin, legal status, and sex. Chi2	The immigrant workers included in this study had limited opportunities for work and Experienced precarious conditions and social vulnerability. The data varied by country of origin. The special needs of this collective should be taken into account to establish public health policies and strategies
Borrell, C. (2008)	To examine the role of social class and its mediating pathways (i.e., work organization, material deprivation at home and household labor) in the association between migration status and health,	Cross-sectional study The study used data from the 2000 Barcelona Health Interview Survey.	Immigrant and Native Populations Spain 2342 Men (Catalonia 1696, Rest of Spain 565, Foreigners 81) and 1872 Women (Catalonia	-Migration status -Social class -Work organization (e.g. work arrangement, work environment) -Material deprivation at home (heating, dishwashing machine, someone hired for household labor, and elevator) -Household labour	-Poor Self-reported health status	*Analysis stratified by sex Multiple logistic regression models. ORa,CI95%.	This study has shown that the pattern of perceived health status among immigrant populations varies according to gender and social class. These results have to be taken into account when developing policies addressed at the immigrant population.

	as well as whether these associations were modified by social class or gender.		1410, Rest of Spain 381, Foreigners 81)				
Social Dimension of Social Exclusion							
Bennet, L. (2018)	To study self-rated health in relation to social capital, socioeconomic status, lifestyle and comorbidity in immigrants from Iraq and to compare it with the self-rated health of native Swedes.	The study was a cross-sectional population-based study conducted from 2010 to 2012 among citizens of Malmö, Sweden.	Immigrant and Native Populations Sweden 1348 Iraqis and 677 Swedes aged 30–65 years and born in Iraq or Sweden.	- Social Capital: social participation, social anchorage, emotional support, instrumental support. - Education level (high school or less, above high school). - Economic difficulties -Physical activity -Tobacco and alcohol use -Depression -Body mass index -Diabetes -Swedish language knowledge	- Poor self-rated health	Linear and Logistic Regression: OR (IC95%)	Although public health initiatives promoting social capital, socioeconomic status and comorbidity in immigrants are crucial, the excess risk of poor self-rated health in Iraqi women is not fully attributed to known risk factors for self-rated health, but remains to be further explored.
Johnson (2017)	To investigate the following hypotheses: 1) if non-refugees have better mental health than Swedish-born, and refugees experience worse mental health than Swedish-born; 2) if mental health status converges with that of Swedish-born with longer duration of residence; and 3)	Cross-sectional study uses baseline data from the Stockholm Public Health Cohort.	Immigrant and Native Populations Sweden 50,498 randomly-selected individuals from Stockholm County in 2002, 2006, and 2010.	-Bonding, bridging, and linking social capital -Sociodemographics	-Psychological distress, using the 12-item General Health Questionnaire.	Logistic Regression (OR, CI95%) and Sobel test .	Social capital explains differences in mental health for some immigrant groups, highlighting its role as a potentially important post-migration factor. Increased investment from policy-makers regarding how social capital can be promoted among new arrivals may be important for preventing psychological distress.

	if social capital mediates the effect of immigrant status on psychological distress for different immigrant groups as compared to Swedish-born.						
Stoyanova, A. (2013)	To explore the ways, social relations contribute to health differences between the immigrants and the native-born population of Spain. We also try to reveal differences in the nature of the social networks of foreign-born, as compared to that of the native-born persons.	Individual-level data are coming from the 2006 Spanish Health Survey. Collective indicators come from other official sources in particular from the Spanish National Survey of Immigrants 2007 and the Spanish World Values Survey for 1995, 2000 and 2005	Immigrant and Native Populations Spain 2006 Spanish Health Survey (26,607 Spanish-born and 2,309 immigrant residents aged 16 and over)	Individual characteristics: -Socio-demographic characteristics (household income, age, gender, education, employment status and social class) -health-related behaviors (body mass index, alcohol consumption, smoking behavior and physical activity. -Individual-level social capital:(Possibility to talk with someone about problems, perceived affection, individual's social interaction with family, and friends) -Community level Social Capital (Social trust, social norms, individual's associational activities).	-Auto-perceived health status (GHQ-12) -auto-perceived mental health	Principal component analysis	The results obtained so far point to the relevance of social capital as a Covariate in the health equation, although, the significance varies according to the specific health indicator used. Additionally, and contrary to what is expected, immigrants' social networks seem to be inferior to those of the native-born population in many aspects; and they also affect immigrant's health to a lesser extent. Policy implications of the findings are discussed.
Salinero-Fort, M. (2012)	To compare self-reported health status between Spanish-born and Latin American-born residents, adjusted by the length of residence in the host country; and additionally, to analyze sociodemographic and	A cross-sectional study using data from a survey in 15 urban primary health care centers, data collected from 2007 to 2009. .	Immigrant and Native Populations Spain 691 Latin American-born, and 903 Spanish-born individuals in in Madrid (Spain).	-Socio-demographic variables (country of birth, age, gender, marital status, occupational status, and monthly income) -psychosocial covariates (social support and stress). -Length of stay	Self-reported health between Spanish-born and Latin American-born.	Logistic regression model to obtain Prevalence Ratios and IC 95%.	Better self-reported health status is associated with being Spanish-born, men, under 34 years old, having an upper middle socioeconomic status, adequate social support, and low stress. Additionally, the length of residence in the host country is seen as a related factor in the self-reported health status of immigrants.

	psychosocial variables associated with a better health status.						
Rodríguez-Alvarez, E.(2009)	To analyze the effect of birth place, migrant status and the modulatory role of social support on health-related quality of life (HRQoL) and the presence of anxiety/depression symptoms.	Cross-sectional study. Data collected in Morocco, and in the Basque Country from the Health Survey in the Basque Country 2002.	Immigrant and Native Populations Spain 2,776 persons: 1,239 Moroccans in Morocco, 149 Moroccans in the Basque Country (Spain) and 1,388 autochthonous individuals. Aged 16-54.	-Social Capital (Duke Scale) - Sex -Age -Educational level	-Health-Related Quality of Life (HRQoL) -Anxiety/ Depression symptoms	Logistic regression to estimate the predictors of HQOL. Hosmer and Lemeshow test-.	Some health indicators are more favorable in Moroccans in the Basque Country than in those living in Morocco, but the frequency of anxiety/depression is higher in Moroccan immigrants. The key factor to understanding social inequalities in health among Moroccan immigrants is social support. Strategies to maintain optimal health in these immigrant collectives should include public policies of social inclusion.
The Cultural Dimension Factors of Social Exclusion							
Rodriguez-Alvarez, E. (2017)	To examine the effect of perceived discrimination and self-rated health among the immigrant population in the Basque Country, Spain, and determine whether this effect varies according to region of origin, age, sex and education.	Cross-sectional study based on data from the 2014 Foreign Immigrant Population Survey of the Basque Country, Spain.	Immigrant and Native Populations Spain 3456 immigrants aged 18 and older residing in the Basque Country.	- perceived discrimination -region of origin (Europe, Africa, Latin America and Asia), -age (18-24, 25-34, 35-49, >49 years), -gender -educational attainment (primary or less, secondary and graduate or higher) - employment status (employed, unemployed and others) -administrative situation (permanent resident, non-permanent resident and irregular resident), -length of stay in the Basque Country (<5, 5-10, >10 years).	- self-rated health	Log-binomial regression, PR.	Perceived discrimination shows a consistent relationship with perceived health. Moreover, this association did not depend on the region of origin, age, sex or educational level of immigrants. These results show the need for implementing inclusive policies to eliminate individual and institutional discrimination and reduce health inequalities between the immigrant and native populations.
Schunck, R. (2015)	To examine pathways between	Cross-sectional study based on data on	Immigrant and Native Populations	-Immigrant Status -Perceived discrimination -Socioeconomic position and	-Health measured by SF-12 (Physical and Mental	Random effects (random	In spite of anti-discrimination laws, the health of immigrants in Germany is negatively affected by perceived

	perceived discrimination and health among immigrants in Germany: (1) whether perceptions of discrimination predict self reported mental and physical health (SF-12), or (2) whether poor mental and physical health predict perceptions of discrimination, and (3) whether discrimination affects physical health via mental health.	immigrants come from the German Socio-Economic Panel (SOEP) from the years 2002 to 2010	Germany (N = 8,307), a large national panel survey-Aged >17 years.	socio-demographics	Health)	intercept) and fixed effects regression models have been computed.	discrimination. Differential exposure to perceived discrimination may be seen as a mechanism contributing to the emergence of health inequalities in Germany
Gil-González, D. (2014)	(1) To study the prevalence and probability of perceived racism and other forms of discrimination on the immigrant and Spanish populations within different public spheres; (2) to show the effect of perceived racism and other forms of discrimination on the health of the migrant population residing in Spain.	Cross-sectional study using data from the Spanish Health Interview Survey (SHIS) (2006)	Immigrant and Native Populations Spain 29,476 individuals i> 16 years	-Exposure to racism (Perceived racism) -Exposure to other types of discrimination (based on sex social class, religion, and sexual orientation) -Explicative variables: Age, Employment Status Marital Status, Level of education, Country of Origin, Social Class, Social Support.	-Self-perceived health -Mental Health -Hypertension -Consumption of antidepressants and stimulants -Having had an injury -Unmet need for medical care -Smoking status	*Analysis Stratified by sex The Breslow-day Homogeneity of Risks test. a p-value of 0.014. Multivariate logistic regression analyses, aOR, and CI95%. Health-related problems attributable to perceived	For both the Spanish and immigrant populations, young people, from the manual social classes, irrespective of their employment status, who have completed secondary education and have low levels of social support, perceive more racism. Racism affects men's health, while racism with other forms of discrimination affects women's health. Half of the reported cases of poor mental health in foreign men are attributed to racism, while most cases of injury in foreign women are attributed to racism together with other forms of discrimination.

						racism was calculated using the attributable population proportion (PAP) expressed in percentages.	
Sevillano, V.(2014)	To compare subjective mental and physical health among native Spaniards and immigrant groups, and examine the effects of ethnicity and perceived discrimination (PD) on subjective health in immigrants	Cross-sectional study based on data collected between 2009 - 2010 in the Autonomous Region of the Basque Country of Spain (CAPV)	Immigrant and Native Populations Spain 1250 foreign-born immigrants, (948 men and 749 women) from Colombia, Bolivia, Romania, Morocco, and Sub-Saharan Africa, and 500 native residents in the CAPV, aged 18 to 65.	-Ethnicity (Country of birth) -Personal Discrimination status -Length of residence -Sociodemographic variables: Age, Income level, Educational level, Type of occupation, Marital status, Legal, mental status. Socio-economic status	-Health-related quality of life (Physical health and Mental health)	*Analysis Stratified by sex Hierarchical regression model	Clear differences in health status among natives and immigrants were recorded. The self-selection hypothesis was plausible for physical health of Colombians and Sub-Saharan African men. Acculturation stress could explain poorer mental health in immigrants compared with natives. The association between ethnicity and poor self-reported mental health appears to be partially mediated by discrimination.
Agudelo-Suarez,A. (2011)	To analyse the relationship between immigrants' perceived discrimination and various self-reported health indicators.	Cross-sectional study based on the ITSAL Project Survey 2008 .	Immigrant and Native Populations Spain 2434 workers (57.4% men) from Colombia, Ecuador, Morocco and Romania	-Perceived discrimination due to immigrant status, due to physical appearance, and related to the workplace. -age, educational level, country of birth, length of stay, residence permit, work permit, and self-perceived health status prior to migrate (change or worsening health)	-Self-rated health health (from SRH at country of birth and in Spain) -Mental health	Logistical regression to estimate aOR and CI95%. Population attributable proportion (PAP) in percentages.	Discrimination may constitute a risk factor for health in immigrant workers in Spain and could explain some health inequalities among immigrant populations in Spanish society.

Table14. . Main Results: Studies on The Independent Associations between Social Exclusion Dimensions and Health among immigrants in Europe		
The Economic Dimension of Social Exclusion		
First Autor	**Outcome Variables**	**Results**
Heggebø, K.(2017)	Ill-health	The results indicate – as expected – that both ill health and minority status are independently related to higher unemployment likelihood. Immigrants and descendants with ill health, however, are not particularly likely to be unemployed. This finding is robust to a number of sensitivity tests, and the empirical pattern is very similar across the 18 included countries
Petrelli, A. (2017)	Physical Health (PCS) Mental Health (MCS)	Compared with 2005 we observed in 2013 among Italians a significant lower probability of worse PCS (PRR = 0.96 both for males and females), while no differences were observed among immigrants; a higher probability of worse MCS was observed, particularly among men (Italians: PRR = 1.26;95%CI:1.22–1.29; immigrants: PRR = 1.19;95%CI:1.03–1.38). Self-perceived scarce/insufficient economic resources were strongly and significantly associated with worse PCS and MCS for all subgroups. Lower educational level was strongly associated with worse PCS in Italians and slightly associated with worse MCS for all subgroups. Being not employed was associated with worse health status, especially mental health among men.
Leopold, L. (2017)	Subjective well-being	immigrants' average declines in subjective well-being exceeded those of natives. Further analyses revealed gender interactions. Among women, declines were smaller and similar among immigrants and natives. Among men, declines were larger and differed between immigrants and natives. Immigrant men showed the largest declines, amounting to one standard deviation of within-person change over time in subjective well-being. Normative, social, and economic factors did not explain these disproportionate declines.
Teixeira, A. (2016)	Psychological distress (PD)	Variables associated with a decrease in PD are being a male (demographic), being satisfied with their income level (SES), living with the core family and having higher number of children, social isolation, planning to remain for longer periods of time in Portugal (migration project), and whether respondents considered themselves to be in good health condition (subjective health status). Study variables negatively associated with immigrants' PD were job insecurity (labor market), and the perception that health professionals were not willing to understand immigrants during a clinical interaction.
Benach, J. (2015)	Precariousness	High prevalence of precarity of work among the study population (42,6%), higher for women (51,4%) than men (34,1%). They found higher precariousness in youth, immigrants, and manual and less educated workers.
	Poor mental health	In the last quartile of association , mental health is 3 times higher than in the first quartile (RPa: 3,21, IC95%: 2,08-4,95, for men ; RPa: 3,45, IC95%: 2,11-5,65, for women).
	Self-Perceived health	The association is higher in men with differences between the higher quartile (RPa: 2,69, IC95%:1,62-4,49, in men ; RPa: 2,14, IC95%: 1,34-3,43, in women).
Cayuela, A. (2015)	Descriptives	For women, a higher proportion of Natives (31.9 %) reported university studies than immigrants (12.9 %), and a smaller proportion of natives reported low education (7.4 %) than immigrants (13.1 %). Regarding occupational social class, 74.7 % of immigrant men and 82 % of immigrant women were manual workers. Immigrants reported more exposure to physical demands (38.3 vs. 24.3 % men; 31.3 vs. 13.7 % women) and higher prevalence of temporary, verbal or no contract than natives. Settled immigrant women have a higher prevalence of poor self-perceived health (34.6 %) and poor mental health (30.1 %) than native women (17.7 % in both health outcomes).
	Poor self-perceived health and Poor mental health	After adjusting for age, occupational social class and the low job the probability that immigrant women have poor self-perceived health was (OR 1.98 95 % CI 1.28, 3.06) and suffer from poor mental health (OR 1.82 95 % CI 1.22, 2.70) was higher than for native women. No statistical differences were found for men. The most influential factor in the relationship between health and migrant status for women workers was an occupational social class (25.0 % for poor self-perceived health and 17.6 % for mental health). Among occupational

		conditions, job satisfaction accounted for 15.8 % of the difference in self-perceived health. Both together have the highest Explanatory Fraction (Formula used: EF = [(ORa-1) - (ORb-1)]/(ORa-1)]).
Novoa, A. (2015)	Health status and Poor mental health	Foreign-born individuals made up a large proportion of both the DAS (93.7 %) and the HMS (57.9 %), the majority of which came from Central and South America. However, the legal situation of the immigrants differed between the two groups: 43.7 % of the DAS participants were undocumented immigrants compared to 2.1 % of the HMS sample. In Barcelona, people seeking Caritas's help and facing serious housing problems had a much poorer health status than the general population, even when compared to those belonging to the most deprived social classes. For example, 69.4 % of adult participants had poor mental health compared to 11.5 % male and 15.2 % female Barcelona residents. Moreover, housing conditions were associated with poor mental health. In men, they found that overcrowding was associated with better mental health, and hypothesized that it might be due to a social safety network to fall back on in difficult times. Such social support could lead to improved mental health.
Robert, G. (2014)	Poor mental health	There was an increased risk of poor mental health in workers who lost their jobs (OR = 3.62, 95%CI: 1.64–7.96), whose number of working hours increased (OR = 2.35, 95%CI: 1.02–5.44), whose monthly income decreased (OR = 2.75, 95%CI: 1.08–7.00) or who remained within the low-income bracket. This was also the case for people whose legal status (permission for working and residing in Spain) was temporary or permanent compared with those with Spanish nationality (OR = 3.32, 95%CI: 1.15–9.58) or illegal (OR = 17.34, 95%CI: 1.96–153.23). In contrast, a decreased risk was observed among those who attained their registration under Spanish Social Security system (OR = 0.10, 95%CI: 0.02–0.48).
Vives, A. (2013)	Descriptives	Compared to men, women were younger, more frequently university graduates (w 26.6% and m 18.8%), less frequently in manual occupations(w 55.1% and m 64.0%), reported more unemployment (w 8.9 % and m 6%) and higher levels of employment precariousness (w18% and 12,8%m)
	Poor Mental Health	Crude PPRs showed a gradient association with poor mental health and remained unchanged after adjustments for age, immigrant status, socioeconomic position, and previous unemployment. Fully adjusted PPRs for the 5th quintile were 2.54 (95% CI: 1.95–3.31) for women and 2.23 (95% CI: 1.86–2.68) for men.
Dunlavy, A. (2013)	Poor self-rated health	Eastern European (OR:95% IC 2.45 ;1.78–3.37) , Latin American OR:95% IC 1.44 ;1.01–2.06)and Other Non-Western workers OR:95% IC 1.79 ;1.33–2.42) had an increased risk of both poor self-rated health and mental distress compared to native Swedish workers. Exposure to adverse working conditions only minimally influenced the risk of poor health.
Ronda, E. (2013)	Descriptives	More than 80 % of all women worked in service sectors. Foreign-born men were employed mainly in manual jobs (75.4 %) Moreover, frequently held temporary contracts, while nearly 30 % of them had no contract. The prevalence of self-reported exposure to occupational health risks for foreign-born workers of both sexes was significantly higher than Spanish-born workers for working many hours standing up, working with extreme temperatures and working many hours/day, while foreign-born women also had a higher prevalence of working with cutting objects and heavy objects falling from above.
	Exposure to occupational risks	Foreign-born men in non-services sectors and those in manual occupations perceived exposure to occupational risks with lower prevalence than Spanish workers. Foreign-born women reported a higher prevalence of exposure than Spanish female workers. By occupation, foreign-born female workers were more likely than Spanish workers to report working many hours/day (aOR2.68; 95 % CI 1.06–6.78) and exposure to extreme temperatures (aOR2.19; 95 % CI 1.10–4.38).
Aichberger, M. (2012)	Emotional distress	Unemployment was associated with increased levels of emotional distress in all women, with the highest level of distress in the group of unemployed Turkish women. The overall SES level was related to a greater level of emotional distress in Turkish women, but not in German women (- 3.2, 95%CI - 5.9 – - .5; p=.020 vs. - .8, 95%CI - 2.7 – 1.2; p=.431). Further stratified analyses by relationship status

		revealed that the association of SES and emotional distress only remained signifi cant among single women.
Solé, M. (2010)	Permanent disability	The prevalence of disabled immigrants (2,41%) is lower tan among Natives (5,48%). However, the probability of permanent disability increases under the risky working condition and health risk. Mathematic models (B coefficient and standard error EE). Immigrants (B-0,2690, EE 0,1483), affiliated to the Social Security > 7500 days (B -0,0495 EE 0,0043) Temporary employment and low-skilled jobs also have a positive impact. Increases in education reduce the likelihood of disability, even after controlling for the impact of education on the choice of (lower) risk. Females have a greater probability of becoming disabled.
Sousa, E. (2010)	Poor self-rated health	The highest prevalence (33.9%) observed among foreign-born documented females without contracts which had lived in Spain for more than three years. In recent immigrants (time in Spain <3 years) the prevalence was 19% among female foreign-born workers with temporary contracts.
Malmusi, D. (2010)	Poor self-assesed health	Women: Immigrants from Spain-Poor Regions: OR 1.48 (CI 1.19 e1.85) Men :Foreign-poor, long-term residence : O.R. 0.60 (CI 0.38 e0.95) Men: Foreign-poor, short-term residence : O.R. 0.45 (CI 0. 0.29 e0.71)
Agudelo-Suarez, A. (2009)	Poor health	90% percent of the sample was aged < 45 years and most had a secondary education (51%). Most of the people surveyed had migrated for economic and working reasons, and 63% had economic dependents. They were working in jobs that were below their educational level and reported problems concerning the type of contract, salaries, and the length of the working week, which was often more than 40 hours. The immigrants frequently reported general health problems (18%), mental health problems (27%), absence from work due to health problems (48%) and occupational injuries requiring medical care (23%). A 51% of them wanted to stay in Spain, and 48% reported that their expectations of emigration to Spain had been met.
Borrell, C. (2008)	Poor health status	Among 11.7% of men and 14.2% of women. This distribution varied by migration status; 8.8% of men being born in Catalonia, 15.0% born in the rest of Spain and 18.5% born abroad. For women these proportions were 10.6%, 27.0% and 16.0%, respectively. Temporary work was more common among women and particularly among foreign women (40.7%); the percentage of temporary workers was higher among women from the rest of Spain (24.1%) than among their male counterparts (6.9%). We found marked gender differences in household labor burden. Women from the rest of Spain declared that they did 21 hours per week. Among men, foreigners presented the poorest health status (fully adjusted odds ratios (OR) 2.16; 95% CI 1.14 to 4.10), whereas among women the poorest health status corresponded to those born in other regions of Spain. There was an interaction between migration and social class among women, with women owners, managers, supervisors or professionals born in other regions of Spain reporting a worse health status than the remaining groups (fully adjusted OR 3.60; 95% CI 1.83 to 7.07)
The Social Dimension of Social Exclusion		
Bennet, L(2018)	Poor-self rated health	Poor self-rated health was identified in 43.9% of Iraqis and 21.9% of native Swedes (p<0.001), with the highest prevalence (55.5%) among Iraqi women. Low social capital was highly prevalent in the immigrants. Female gender showed higher odds of poor self-rated health in Iraqis than in Swedes (OR 1.8, 95% CI 1.4–2.5, $p_{interaction}$=0.024), independent of other risk factors connected to social capital, socioeconomic status, lifestyle or comorbidity.
Johnson (2017)	Psychological distress	The results show that refugees generally had greater odds of psychological distress than non-refugees compared to their respective Swedish-born counterparts. Among immigrant men, both refugees and non-refugees had significantly greater odds of psychological distress than Swedish-born men. Only refugee women in Sweden 10 years or more had significantly greater odds of psychological distress compared to Swedish-born women. The mediation analysis demonstrated that indicators of social capital mediated the

		association for all immigrant men (except non-refugees in Sweden 3-9 years) and for refugee women in Sweden 10 years or more. While bonding social capital showed the greatest mediatory role among the three social capital types, adding them together had the strongest explanatory effect.
Stoyanova, A. (2013)	Mental health	For both groups, higher income reduces the risk of mental health. For natives age was not significant, while for immigrants the effect is U-shaped. Women are also more prone to mental health problems, though the effect is larger for immigrants. Education is significant only for natives, i.e. less-educated individuals are more likely to be at risk of mental disorder, while social class, approached as the occupation of the household head, has turned out to be not significant in both population groups. Over-weighted/ obese and smokers are more likely to be diagnosed a mental disorder for both immigrants and natives. However, alcohol consumption and a poor physical activity increase this probability only for Spanish-born residents. **All the factors collecting the effect of the individual social capital are statistically significant**, i.e. higher stocks of individual social capital reduce the probability of suffering any mental disorder. However, the associational activities report an unequivocal negative effect on the probability of mental sickness.
	Physical health	The associational activities exert a significant positive effect on the probability of reporting good health for Spanish-born residents.
Salinero-Fort, M. (2012)	Self-reported health	The Spanish-born participants reported a better health status than the Latin America-born participants (79.8%versus 69.3%, p,0.001). Stratified by gender data showed that Compared to men, women had poorer social support (14.8% versus 28.8%, p,0.001), were more frequently single (35.6% versus 43%, p = 0.005), not working (21.8% versus 15.4%, p = 0.046) and with incomes of under 500 euros (14% versus 7.6%, p = 0.006). Different patterns of self-reported health status were observed depending on the length of residence in the host country. The proportion of immigrants with a better health status is greater in those who have been in Spain for less than five years compared to those who have stayed longer. Better health status is significantly associated with being men, under 34 years old, being Spanish-born, having monthly incomes of over 1000 euros, and **having considerable social support and low stress**.
	Social support	Differences in perception of social support were found between the two groups analyzed. Spanish-born participants showed better global, emotional, instrumental, social interaction and affective support than Latin American-born participants. As to social network size, the group of Latin American-born participants reported having a smaller network size than those Spanish-born (6.1 and 8.9, respectively), showing a statistically significant difference (p = 0.001).
	Stress	Regarding the percentage of subjects with stress in the sample, Latin American-born participants reported significantly more stress (55.9%) than those Spanish-born (45.6%).
Rodríguez-Alvarez, E.(2009)	Health-Related Quality of Life (HRQoL)	Immigrant status, compared with living in Morocco, was a protective factor in practically all SF-36 dimensions but was also a risk factor for the development of anxiety/depression symptoms. Differences in HRQoL between Moroccans and the autochthonous population in the Basque Country were attenuated when variables of social support were included in the multivariate models. Low social support and dissatisfaction with social life increased the risk of low HRQoL scores and the presence of anxiety/ depression symptoms among Moroccans in the Basque Country
The Cultural Dimension Indicators of Social Exclusion		
Rodriguez-Alvarez, E.(2017)	Self-perceived health	Almost 1 in 10 immigrant adults reports perceiving discrimination. In adjusted analyses, the immigrants perceiving discrimination were almost were 1.92 more likely to rate their health as poor (prevalence ratio: 1.92; 95% CI: 1.44–2.56) than those who did not report discrimination. This association did not vary according to region of origin, age, sex or educational level.
Schunck,	Mental health and Physical	Perceptions of discrimination affect mental and physical health. The effect of perceived discrimination on physical health is mediated by

R.(2015)	health	its effect on mental health. The analyses do not support the notion that mental and physical health predict the subsequent reporting of discrimination. Different immigrant groups are differentially exposed to perceived discrimination.
Gil-González, D. (2014)	-Poor mental health -Use of psychotropics	Health problems attributable to racism through the population attributable proportion (PAP). Immigrants perceived more racism than Spaniards in the workplace (ORM = 48.1; 95 % CI 28.2–82.2) and receiving health care (ORW = 48.3; 95 % CI 24.7–94.4). Racism and other forms of discrimination were associated with poor mental health (ORM = 5.6; 95 % CI 3.9–8.2; ORW = 7.3; 95 % CI 4.1–13.0) and injury (ORW = 30.6; 95 % CI 13.6–68.7). It is attributed to perceived racism the 80.1 % of consumption of psychotropics (M), and to racism with other forms of discrimination the 52.3 % of cases of injury (W). Racism plays a role as a health determinant. For both the Spanish and immigrant populations, young people, from the manual social classes, irrespective of their employment status, who have completed secondary education and have low levels of social support, perceive more racism.
Sevillano, C. (2014)	Physical health and Mental health	Male immigrants from Colombia and Sub-Saharan Africa showed better physical health than natives, controlling for age and socioeconomic and marital status. The immigrants except for the Colombians had poorer mental health than natives, especially African men and Bolivian women. Socioeconomic status had no impact on these differences. Among immigrants, PD was the best predictor of physical and mental health (controlling for socio-demographic variables). African men, Bolivian women, and women without legal status exhibited the poorest self-rated mental health.
Agudelo Suarez, A. (2011)	Poor self-perceived health	The majority (75.4%) of participants reported at least one type of discrimination. The most frequently reported category of perceived discrimination was due to immigrant status (72%). Workers reporting workplace-related discrimination were more likely to report self-perceived poor health (OR 1.93; 95% CI 1.54-2.42) Workplace related discrimination shows the strongest association with a decline in perceived health (OR 2.20 95% CI 1.73-2.80). Also, 40% of cases reporting worsening in self-perceived health were attributable to discrimination due to immigrant status, 37% of cases were attributable to perceived discrimination related to the workplace and finally 15% of cases were attributable to the perceived discrimination related to the physical appearance.
	Poor mental health	Workers reporting workplace related discrimination were more likely to report poor mental health (OR 2.97; 95% CI 2.45- 3.60). Furthermore, the population reporting discrimination due to immigrant status was more likely to report anxiety (OR 2.16; 95% CI 1.64-2.83), and more likely to report insomnia (OR 2.15; 95% CI 1.61- 2.86).

Appendix B: additional information

From Chapter 4: Inequalities in depressive symptoms between natives and immigrants in Europe: The mediating role of social exclusion.

Table15. Prevalences (%) of depressive symptoms for social exclusion factors and sociodemographics according to immigrant status; p-values compare immigrant status groups . The seventh round of the European Social Survey, 2014.

	Natives 22557;92.6%	**Immigrants 1-10 years (n=543;2.2%)**	**Immigrants 11-20 years (n=555;2,3%)**	**Immigrants >20 years (n=719; 3,0%)**	**Total (N=24,374; 100%)**	**p-value**
	%	**%**	**%**	**%**	**%**	
Sociodemographics						
Sex						
Men	19,9	30,6	23,2	26,0	20,4	≤0,001
Women	29,6	35,3	34,6	44,5	30,3	
Age						
18-33	26,4	35,8	31,8	38,5	27,0	≤0,001
34-49	22,6	32,0	23,9	36,0	23,3	
50-65	25,6	12,1	37,5	35,0	26,0	
Education level						
Less than secondary (Low)	39,0	43,4	36,7	55,8	40,4	≤0,001
Secondary (Middle)	26,9	32,0	28,8	33,7	27,2	
Tertiary (High)	18,9	30,6	24,8	26,7	19,5	
Living with a partner						
Yes	22,4	36,2	25,4	36,6	23,2	≤0,001
No	29,2	29,7	34,3	33,5	29,5	
Economic Dimension						
Financial difficulties while growing up	20,7	32,2	27,3	25,3	21,1	≤0,001
No	31,0	32,9	29,6	43,2	31,5	
Yes						
Feeling about Household Income						
Living comfortably /Coping	20,9	28,5	19,5	30,7	21,2	≤0,001
Difficult/Very difficult	41,6	39,5	46,4	48,0	42,0	
Housing Problems						
No	22,8	30,1	27,0	30,9	23,3	≤0,001
Yes	34,5	40,3	32,8	52,8	35,4	
Activity						
Employed	20,2	27,0	23,6	28,9	20,6	≤0,001
Unemployed	34,8	35,4	39,2	54,2	35,6	
Other economically Inactive	33,0	39,1	33,3	45,8	33,6	
Social Dimension						
Informal Social Contacts						
Good social contacts	23,3	32,1	26,9	34,1	23,8	≤0,001
Poor social contacts	32,0	34,0	35,2	43,2	32,5	
Trust in Institutions (Thin Trust)						
High	18,8	28,0	21,7	35,6	19,9	≤0,001
Low	28,1	42,4	37,2	35,9	28,6	
Trust in people (Thick trust)						
High	19,8	29,4	22,8	29,0	20,3	≤0,001
Low	30,3	36,7	35,3	41,6	30,9	
Cultural Dimension						
Sense of belonging to the country						
Yes (feel close to the ctry)	24,0	32,0	28,0	33,3	24,6	≤0,001
No (do not feel close to the ctry)	29,9	37,1	38,5	65,3	30,9	

Notes: n= number of cases.

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Skill Highlights

- Critical thinking
- Project management
- Technical skills
- Complex problem solver
- Quantitative data analysis
- Flexibility
- Academic writing
- Effective communication

Current Position

Researcher: 07/2019 to present

Behavioral Research Science Institute, Catholic University, La Paz, Bolivia

Main tasks:

- Develop and direct given research assignments
- Create a plan of action, set project goals, and manage to
- completion
- Formulate effective and efficient research processes
- Design surveys, questionnaires, polls, etc. specific to research requirements
- Perform fieldwork, surveys, experiments, interviews, etc. to gather data
- Utilize various data sources to find and extract and synthetize pertinent information
- Perform advanced quantitative analysis and organize research databases
- Compile and organize findings in graphs, charts, mock-ups, and diagrams
- Document, report, and present research findings to
- management and funders

Education

Diploma	Universty	Grade	Date (month/year)
Psychopedagogical management of Postgraduate classes	Mayor de San Andrés University	Diploma	12/2009
Master of Public Health Specialization in Advanced Health Research Methods	University of Copenhagen, Institute of Public Health	Magister	07/2009
European Master of Public Health	University of Copenhagen. Universidad de Granada with the Andalusian School of Public Health	Magister	07/2009
Medical Sugeon Doctor	Universidad Mayor de San Andrés	Bachelor	04/2005

Professional Experience

Workplace	Position	From month/year	To month/year
Behavioral Sciences Research Institute	Associate researcher	June 2018	Feb 2019
Postgraduate School of Publich Health Mayor de San Andrés University	Associate Professor	Mar2018	Mar 2019
Escola Nacional de Saúde Pública, Universidad Nova de Lisboa, Portugal	Doctorate fellow	Oct 2013	Dec 2017
PROQUALITY	Consultant	Feb 2011	Sept2013
Postgraduate School of Publich Health Mayor de San Andrés University	Associate Professor	Mar 2009	Mar2013
French Cooperation Office	Researcher- Consultant	Oct2009	May 2010
International Health Department , University of Copenhagen, Dinamarca	Internship fellow	Aug 2008	Jun 2009

Publications

Title	Journal	Date Mes/Año	State
The socio-technical functionality of rural community-managed water in Bolivia	International Journal of Water Resources	11/2019	Under peer review
Social Exclusion and immigrants' health in Europe: A scoping review	Demographic Research	11/2019	Under peer review
Arias-Uriona AM. Inequalities in depressive symptoms between natives and immigrants in Europe: The mediating role of social exclusion.	Cadernos de Saude Publica	06/2019	Forthcoming
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Arias-Uriona AM. Multidimensional Social Exclusion and Self-reported Health in the Immigrant Population in Europe	Revista Migración	06/2019	Under peer review
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